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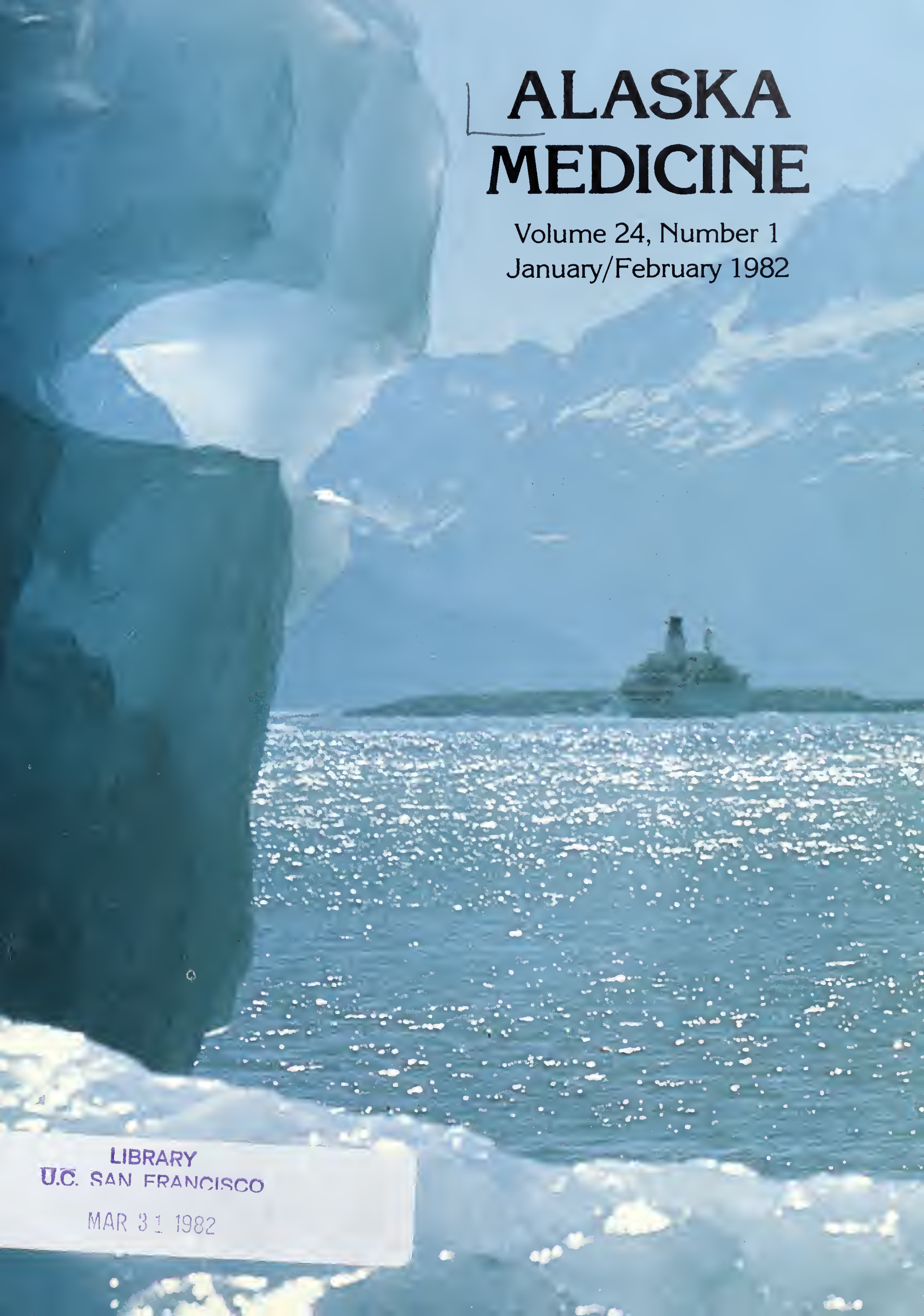

ALASKA MEDICINE

Volume 24, Number 1
January/February 1982

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ALASKA MEDICINE

Official Journal of the Alaska State Medical Association

4107 Laurel, Anchorage, Alaska 99504

Volume 24 January/February 1982 Number 1

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ALASKA MEDICINE is the bi-monthly journal of the Alaska State Medical Association; Alaska Medicine, 4107 Laurel, Anchorage, Alaska 99504. *ALASKA MEDICINE* is printed by Northern Printing Company, Inc., 655 Warehouse Avenue, Anchorage, Alaska 99501.

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Biobehavioral Changes in Prolonged Competitive Stress

Observations of Iditarod Trail Sled Dog Mushers

Verner Stillner, M.D., M.P.H.

Michael K. Popkin, M.D.

Chester M. Pierce, M.D.

Abstract

Five male competitors in the prolonged, highly stressful Iditarod Trail International Sled Dog Race were studied. This 1100 mile Alaskan competition incorporates principal features of protracted physical exertion after training and cold exposure. A series of behavioral and physiological variables were examined at four points attendant to the 1978 race: 1) 3 days pre-race, 2) day 5 or 6 of the competition, 3) day 12 or 13 of the competition and 4) immediately post-race (day 15 or 16). Measures of behavioral response included the Spielburger State-Trait Anxiety Inventory (STAI), the Manual Finger Tapping Test and mental status evaluations performed by psychiatric examiners. Physiological responses were examined by serial collections of blood and urine with laboratory determinations performed for 35 parameters. Resultant behavioral and physiological changes were examined for relationship to race performance.

The results show a decrease from baseline in State Anxiety during the first week of the race followed by an increase during the second week of the race. Trait Anxiety levels for the group were within the range of normative values. Mean scores for right and left index fingers in the Manual Finger Tapping Test revealed a progressive decrease in efficiency during the race. These changes, however, were not consistent with those that have been demonstrated in brain damaged individuals. With regard to mental status examinations, all racers displayed slowing of psychomotor activity, impairment of recent memory and temporal disorientation. Two racers reported visual hallucinations; three reported illusions.

Physiological changes proved only partly consistent with those observed in pre-post studies of the 1977 race. The 1978 serial sampling technique showed that most alterations had occurred within the first 5-6 days of the race. In the immediate post race sample major changes from pre-race (e.g., baseline) determinations included: 1) significant reduction in mean hemoglobin, hematocrit and red cell count; 2) significant decreases in mean T_3 uptake and TSH level; 3) significant increases in mean BUN, Creatinine, Chloride; 5) significant increase in the mean specific gravity of the urine.

The alterations are individually discussed with reference to prior studies, behavioral interrelationships and implications. Possible mechanisms underlying several of the findings are considered.

Introduction

The Iditarod Trail Sled Dog Race is an annual Alaskan event affording an excellent opportunity for the study of long duration competitive stress. Stressors include prolonged physical exertion, potentially extreme climatic conditions (temperatures to -45°C and windchills of -90°C), rugged terrain, managing a team of 12 or more dogs, damage to equipment and sled, sleep deprivation and threats of frostbite and hypothermia.[1]

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Supported by Harvard University Research Grant (RR 07046-14).

The authors wish to thank the Iditarod Trail Committee, the mushers, Dr. James Eckman and Dr. Jim Lanier.

Winning times have ranged from two to three weeks for this 1100 mile race from Anchorage to Nome.

The race is a continuous two to four week event save a mandatory 24-hour stopover. Twenty-four checkpoints along the trail are used to store food and supplies for dogs and mushers. The night is often used for mushing with aid of miners' lights. During the final week of the race, frontrunners average three or less hours of sleep per night.

We have shown in 1975 Iditarod competitors the predictive value of recent life changes regarding race performance.[2] A 1977 study[3] involving blood and urine assessments before and after the race expanded our exploration of human response to race stresses. The results showed a unique constellation of physiological responses to the combination of protracted competitive exertion after training and cold exposure. This constellation included: 1) a reduction in mean hemoglobin level; 2) a reduction in T_4 and free T_4 index; 3) a fall in mean cortisol level below the range of normal; 4) surprisingly modest increments in mean CPK and LDH values and 5) a striking fall in mean cholesterol (despite diets that were not low in cholesterol and saturated fats), followed by a post-race rebound far above baseline. We have also described behavioral changes in Iditarod races.[4] The utilization of caffeine as a central nervous system stimulant culminated in delirium for a 1977 musher.[5]

The current study examines a combination of biological and behavioral variables before, during and immediately following the 1978 Iditarod race. We report the principal blood, urine and behavioral changes in male subjects stressed by an unusually prolonged competition (1100 miles in 2-3 weeks).

Method

The study was approved by the Research and Assurance Committee of the Alaska Psychiatric Institute and the principles of the Helsinki Declaration were followed. Five mushers were selected for study in the 1978 race with the approval of the Iditarod Trail Committee. Each volunteer gave informed consent and was paid for participation in the study.

All five mushers were veterans of at least one previous Iditarod race. The subjects were Caucasian males with a mean age of 40.0 (range 29 - 61) years. Immediately prior to the race one subject was treating himself for a "flu" syndrome with tetracycline and another was prescribed Naproxen (Naprosin) for a recent shoulder injury. Three of the subjects reported occasional alcohol consumption; two cigarette or "snuff" usage. All had a training period of at least eight months with mushing ranging from 800 to 1500 miles.

Three months prior to the race, subjects' mean weight was 73.2 (range, 62.3 - 79.5) kgs. and mean height was 1.76 (range, 1.65 - 1.88) m. At this time, mushers provided biographical information, completed a Self Evaluation Questionnaire[6] (STAI) and Finger Tapping Test.[7] Vital signs, blood and urine specimens were obtained at four times: 1) three days prior to the start of the race in Anchorage; 2) the fifth or sixth day of the race in McGrath (375 miles); 3) the twelfth or the thirteenth day of the race in Unalakleet (820 miles); 4) the fifteenth or sixteenth day of the race in Nome (1100 miles). Samples and data collection were obtained from the musher immediately upon his arrival at the checkpoints before food and fluid intake.

Anxiety questionnaires (STAI) were completed by each subject before a series of five valid trials (ten seconds each) or maximum index finger tapping with each hand. The right hand was tested first in all trials. Interviews including mental status examinations were conducted by a psychiatrist (V.S.) before the race, twice during the race and at the finish line. A log of mental status observations and anecdotal data for each musher was kept by the interviewer.

Aseptic venipuncture technique was utilized for the collection of 20 ml of blood. A sample of 50 ml of urine was collected and refrigerated. All specimens were collected by the same technician who promptly centrifuged and separated the blood, prepared blood slides and transported the specimens to the Providence Hospital Laboratory, Anchorage for analysis within 24 or 48 hours of collection. The following hematological parameters were determined for each sample: hemoglobin, hematocrit, RBC count, red cell indices, WBC count and reticulocyte count. Also obtained was a SMAC-24, creatine phosphokinase (CPK), Thyroxine (T_4), Radioimmunoassay (RIA), Triiodothyronine (T_3), Free Thyroxine (FT_4), Thyroid Stimulating Hormone (TSH) and urine toxicology with an alkaloid and hypnotic screen. SMAC-24 and thyroid stimulating hormone (TSH) were subsequently performed by Reference Laboratory, Newbury Park, California and Upjohn Company, Woodland Hills, California, respectively.

Hematological parameters were measured on a Coulter Counter (Model S). All blood smears were reviewed with respect to red blood cell morphology, evidence of polychromasia, white cell differentials and platelet count. Urinalyses were performed by standard techniques.

Results are reported as the mean for the five participants and the variance as the standard error of the mean. Statistical analysis of the physiological results was performed on pre versus post race samples using small sample paired t-Tests.

Individual and group mean scores for the Anxiety and Finger Tapping measures were computed. Physiological and behavioral measures were examined for possible relationship to race performance.

Results

39 racers, called "mushers", started the 1978 race; 34 finished. The winning time was 14 days and 19 hours. The final musher to reach Nome completed the race in 22 days. All our subjects completed the 1100 mile race within 16 days. They placed 1st, 5th, 10th, 16th and 18th among the 34 finishers. Race conditions were good with relatively mild ambient temperatures ranging from -14°C to 0°C.[8]

Behavioral Parameters

Psychiatric interviews prior to the race gave no evidence of a formal psychiatric disorder or an organic mental disorder in any subject. Mental status examinations during the race revealed cognitive impairment in all subjects. This was first noted on day 5 or 6 and continued throughout the remainder of the race. A general slowing in psychomotor activity was noted together with impaired recent memory functions. Many subjects forgot to collect their gloves and hats after the testing period. Speech was slow and deliberate. Orientation as to time was impaired. Two of the five mushers reported visual hallucinations and three reported illusions, i.e., "every shadow looked like a hole in the ice".

All mushers throughout the race reported experiencing variable sleep deprivation. Two hours sleep in 72 hours was not uncommon. The subjects often fell asleep during blood drawing or when they were not being actively interviewed.

In the Self Evaluation Questionnaire (STAI), all subjects save one reported greater than usual anxiety during the race. The exception was the musher who began the race with a "flu syndrome". Mean anxiety scores for the group decreased slightly within the first week of the race and then increased during the final third of the race, the height of competition. Of the five racers, the winner displayed the greatest increase of mean anxiety scores ($x = 35$) from the baseline anxiety score (27).

The mean scores for the (R) and (L) index fingers on the Finger Tapping test revealed a progressive decrease in efficiency as the race progressed.

Hematological Measures

As shown in Figure 1, a decrease in hemoglobin occurred during the first six days of the race. The mean hemoglobin concentration in the mushers fell 1.3 grams/d1; this was a significant change ($P = .030$) versus baseline. Paralleling this decrease in hemoglobin concentration, the mean hematocrit fell 4.1% ($P = 0.012$) and the red cell count fell 0.51×10^9 cells/liter ($P = 0.014$). There were no significant changes in red cell indices, reticulocyte percentage, white cell counts, differentials and platelet count. No bleeding or hemoglobinuria was reported or detected.

Red cell morphology remained normal and specifically failed to demonstrate evidence of fragmentation or spherocytosis.

Thyroid Measures

Comparison of pre and post samples showed the mean T_3 uptake fell 7.4%, a significant decrement (Table 1). The mean free T_4 index fell slightly 0.4. The mean T_4 increased by 0.6 meg %. Mean TSH levels decreased by 2.6 mc IU/ML which was significantly different from the pre-race value ($P = .012$).

Enzyme Determinations

Results of enzyme determinations are summarized in Table 2. Comparing pre-post samples, mean SGPT increased by 19.0 U/L and SGOT by 24.4 U/L. These are statistically significant changes.

Serum Chemistries and Urine Measures

Results of serum chemistry determinations are summarized in Table 3. BUN rose 7.4 mg/d1; creatinine increased 0.2 mg/d1 and chloride was 4.4 meg/1 higher at race's end. Urinalysis (Table 4) revealed a mean post race specific gravity of 1.031 (+ .001) which differed significantly ($P = 0.011$) from the mean pre-race value 1.022 (+ .002). Calcium oxalate crystals were detected in three subjects post race. Caffeine was detected in the urine of four subjects and nicotine was detected in two subjects post race.

Discussion

In reviewing these findings, it should be kept in mind that these veteran mushers had trained extensively (e.g., 800 to 1500 miles) prior to the race. Multiple stressors - extreme and prolonged physicial exertion, rugged terrain, cold exposure, disruption of normal sleep patterns, altered diet and the handling and care of 10 or more dogs - influenced the results. It is beyond the scope of the current study to assess the relative contributions of the individual stressors to the observed changes.

Several significant alterations in mushers' physiological parameters occurred during the 1978 Iditarod. These are presented in Table 4. Strikingly, only the changes in hematologic measures were consistent with reports of athletes' anemia emerging with less prolonged and less extreme exercise.[9] [10] It is noteworthy that the decrements in hemoglobin, hematocrit and red cell count had occurred by the fifth and sixth day of the race. Thereafter, values remained relatively stable throughout the race. The decrement in hemoglobin concentration may have resulted from a decrease in red cell mass or an increase in plasma volume. The former possibility is unlikely since normal red cell survivals have been previously observed in two Iditarod subjects.[3]

Previous studies of less prolonged exercise have demonstrated that either hemodilution or hemoconcentration may occur during physical exertion.[11] [12] [13] [14] Such conflicting observations have been attributed to variables such as intensity and duration of exercise, degree of previous physical training and level of hydration.[14] [15]

The reduced hemoglobin concentration in the 1978 racers together with the earlier data regarding red cell survival suggests that hemodilution occurred in the men secondary to an increase in plasma volume. The extent of this change may have been masked by less than adequate hydration in later stages of the race. This prospect is suggested by the rise in BUN, creatinine and urinary specific gravity.

Studies of thyroid function revealed a decrease in T_3 uptake, slight decrease in mean free T_4 and decrease in TSH levels. These changes, which may in part reflect protein and hydration shifts, do not suggest the thyroid hypofunction seen by race's end in 1977 subjects.

The elevation of Serum Glutamic Pyruvic Transaminase, Serum Glutamic Oxaloacetic Transaminase and CPK observed is consistent with results obtained in other studies of physical exertion.[16] [17] These rises largely appear to reflect release from skeletal muscle during severe exertion.

The increase in urine specific gravity and the presence of calcium oxalate crystals are consistent with dehydration. Mushers throughout the race had difficulty in providing us with a urine specimen sufficient for laboratory analysis. The increases in the chloride, creatinine and BUN are all consistent with volume depletion. The drinks most commonly utilized on the trail are caffeinated (e.g., tea, coffee or cola) and have diuretic properties. Urine testing for caffeine was positive for all mushers in Nome whereas hypnotic and alkaloid screening was negative. Although mushers were greatly concerned about the state of hydration of their dogs, they were less visibly concerned about their own hydration.

The disparities between the present physiological results and those observed in 1977 racers may reflect differences in race conditions and subjects' preparation, diet and hydration. The thyroid and cholesterol changes demonstrated in 1977 were not present in 1978. However, the changes in hematological measures were remarkably similar to those in the earlier study. This suggests that these shifts may be central to human response to the rigors of the Iditarod. The reduction in hemoglobin, hematocrit and red cell count may have adaptive value for the mushers. The present study clarifies that these shifts are effected early in the race and then maintained.

Behavioral changes consistent with organic mental disorder were noted on the fifth and sixth day of the race after 375 miles of racing. The mushers reported an average of six hours of sleep per night prior to the race. During the first mid race interview the group said they averaged 3.6 hours of sleep for the prior twenty-four hours. The front runners reported fewer hours of sleep than their slower colleagues. This pattern of sleep alteration persisted throughout the race. It was followed by a prolonged period of sleep (8-12 hours) upon arrival in Nome.

Disruption of normal sleep patterns, dehydration, prolonged physical exertion and cold exposure may all have contributed to the persistent decrease in performance in the psychomotor task (e.g., finger tapping). These factors may also underlie the organic impairment evident in the mushers by the end of the first week. Anxiety state increased in the last third of the race and then returned to pre-race levels upon arrival in Nome.

Measures of anxiety and psychomotor function did not correlate with either physiological measures or race performance nor was any relationship of physiological parameters to race performance established.

We conclude from this study that future investigations of prolonged competitive stress as represented by the Iditarod should focus on hematologic changes, cognitive impairment and their interaction and relationship to performance.

Figure 1. Hemoglobin Values in Iditarod Participants. N = 5

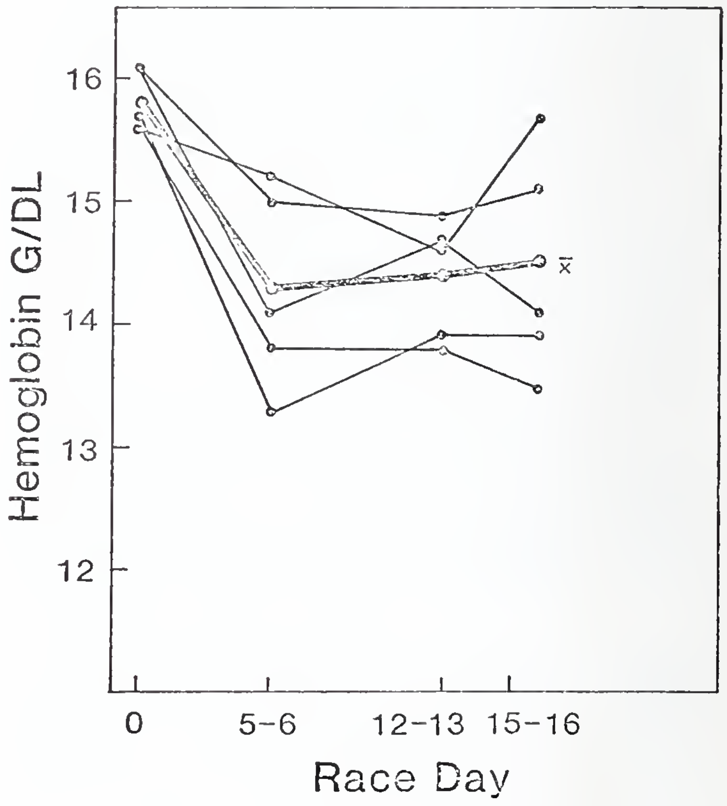

Table 1. Mean (+S.E.M.) Thyroid Values in Iditarod Participants. N = 5

PARAMETER	NORMAL RANGE	(Pre-Race) SAMPLE 1 Day 0	SAMPLE 2 Day 5-6	SAMPLE 3 Day 12-13	(Post-Race) SAMPLE 4 Day 15-16	Pre-Post
T_4 (mcg/%)	5.5-11.5	7.6 (± 0.4)	7.3 (± 0.4)	7.6 (± 0.5)	8.2 (± 0.9)	p = 0.588
T_3 UPTAKE (%)	35-45	44.8 (± 2.1)	43.8 (± 0.6)	41.0 (± 0.9)	37.4 (± 1.3)	p = 0.033
FREE T_4 INDEX	1.9-5.2	3.5 (± 0.1)	3.2 (± 0.1)	3.2 (± 0.2)	3.1 (± 0.3)	p = 0.260
TSH (mciu/ml)	0-10	8.0 (± 0.7)			5.4 (± 1.1)	p = 0.012

Table 2. Mean (+S.E.M.) Enzyme and Bilirubin Values in Iditarod Participants. N = 5

PARAMETER	NORMAL RANGE	(Pre-Race) SAMPLE 1 Day 0	SAMPLE 2 Day 5-6	SAMPLE 3 Day 12-13	(Post-Race) SAMPLE 4 Day 15-16	Pre-Post
CPK (IU/L)	10-120	68.0 (± 18.1)	312.6 (± 50.3)	295.6 (± 52.2)	304.8 (± 85.2)	p = 0.059
LDH (IU/L)	60-225	135.6 (± 3.6)	319.2 (± 135.0)	170.6 (± 25.6)	211.0 (± 37.4)	p = 0.109
SGOT (U/L)	0-55	23.8 (± 2.2)	45.4 (± 6.0)	28.4 (± 3.0)	48.2 (± 7.3)	p = 0.052
SGPT (U/L)	0-45	11.4 (± 2.1)	24.2 (± 4.9)	16.4 (± 2.3)	30.4 (± 4.0)	p = 0.015
ALK PTASE (U/L)	30-110	70.8 (± 5.3)	68.2 (± 0.9)	64.4 (± 2.4)	68.6 (± 2.0)	p = 0.699
BILIRUBIN (mg/dL)	0.1-1.2	0.7 (± 0.1)	0.3 (± 0.1)	0.2 (± 0.0)	0.5 (± 0.1)	p = 0.280

Table 3. Mean (+S.E.M.) Chemistry in Iditarod Participants. N = 5

PARAMETER	NORMAL RANGE	(Pre-Race) SAMPLE 1 Day 0	SAMPLE 2 Day 5-6	SAMPLE 3 Day 12-13	(Post-Race) SAMPLE 4 Day 15-16	Pre-Post
SODIUM (meq/L)	135-147	137.6 (± 0.2)	140.6 (± 0.7)	133.0 (± 0.5)	139.2 (± 1.2)	p = 0.195
POTASSIUM (meg/L	3.5-5.5	4.1 (± 0.1)	5.8 (± 0.4)	4.0 (± 0.1)	4.3 (± 0.2)	p = 0.189
BICARB. (meg/L)	24.30	27.0 (± 0.7)	24.4 (± 0.8)	26.0 (± 0.7)	26.2 (± 0.4)	p = 0.405
CHLORINE (meg/L)	95-110	101.0 (± 0.6)	106.2 (± 0.6)	98.4 (± 0.8)	105.4 (± 1.0)	p = 0.043
BUN (mg/dL)	10-25	15.6 (± 1.3)	19.8 (± 1.6)	21.6 (± 2.4)	23.0 (± 2.6)	p = 0.010
CREATININE (mg/dL)	0.7-1.3	1.1 (± 0.0)	1.2 (± 0.1)	1.0 (± 0.1)	1.3 (± 0.1)	p = 0.024
CALCIUM (mg/dL)	9.0-11.0	9.8 (± 0.1)	8.9 (± 0.7)	8.9 (± 0.2)	10.2 (± 0.2)	p = 0.187
PHOSPHORUS (mg/dL)	2.5-4.5	2.7 (± 0.1)	3.5 (± 0.5)	2.9 (± 0.2)	3.2 (± 0.3)	p = 0.114
GLUCOSE (mg/dL)	65-110	91.4 (± 4.6)	121.6 (± 9.0)	103.2 (± 11.5)	107.4 (± 5.0)	p = 0.153
URIC ACID (mg/dL)	4.0-8-0	5.7 (± 0.3)	6.0 (± 0.3)	5.2 (± 0.5)	6.4 (± 0.4)	p = 0.303
TOTAL PROTEIN (g/dL)	6.0-8.5	6.8 (± 0.2)	6.8 (± 0.3)	6.3 (± 0.2)	6.8 (± 0.3)	p = 1.000
ALBUMIN (g/dL)	3.2-5.0	4.1 (± 0.0)	4.3 (± 0.2)	3.8 (± 0.1)	4.1 (± 0.1)	p = 0.871
GLOBULIN (g/dL)	1.5-3.5	2.7 (± 0.2)	2.5 (± 0.2)	2.5 (± 0.2)	2.7 (± 0.1)	p = 0.880
CHOLESTEROL (mg/dL)	140-270 40 yrs. 150-330 40 yrs.	174.6 (± 13.8)	161.8 (± 12.2)	151.0 (± 2.5)	166.8 (± 6.7)	p = 0.666
TRIGLYCERIDES (mg/dL)	40-175	62.2 (± 8.8)	56.6 (± 12.4)	60.2 (± 10.0)	45.6 (± 11.2)	p = 0.414

Table 4. A constellation of Physiological Responses to Iditarod Participation
Major Changes Observed in the Immediate Post-Race Sample Versus Immediate Pre-Race Sample
(N = 5

CATEGORY	PARAMETER	PRE-RACE MEAN (± SEM) SAMPLE 1	POST-RACE MEAN (± SEM) SAMPLE 4	CHANGE (= SAMPLE 4) MINUS SAMPLE 1)
HEMATOLOGY	Hemoglobin (gm)	15.8 (± 0.1)	14.5 (± 0.4	- 1.3*
	Hematrocrit (%)	45.8 (± 0.2)	41.7 (± 0.8)	- 4.1**
	RBC (x10^6)	5.20 (± 0.09)	4.68 (± 0.18)	- 0.52**
ENDOCRINE	T$_3$ UPTAKE (%)	44.8 (± 2.1)	37.4 (± 1.3)	- 7.5*
	TSH mciu/ml	8.0 (± 0.7)	5.4 (± 1.1)	- 3.4**
ENZYMES	SGOT (U/L)	23.8 (± 2.2)	48.2 (± 7.3)	+ 24.4*
	SGPT (U/L)	11.4 (± 2.1)	30.4 (± 4.0)	+ 19.0**
SERUM	BUN (mg/dL)	15.6 (± 1.3)	23.0 (± 2.6)	+ 7.4**
CHEMISTRY	Creatinine (mg/dL)	1.1 (± 0.0)	1.3 (± 0.1)	+ 0.2*
	Chloride (meg/L)	101.0 (± 0.6)	105.4 (± 1.0)	+ 4.4*
URINE	Specific Gravity	1.0222 (± 0.002)	1.0310 (± 0.000)	+ 0.0088**

** Using a two-tailed paried sample t-test, the increase (or decrease) was significant, p .01.

* Using a two-tailed paried sample t-test, the increase (or decrease) was significant, p .05.

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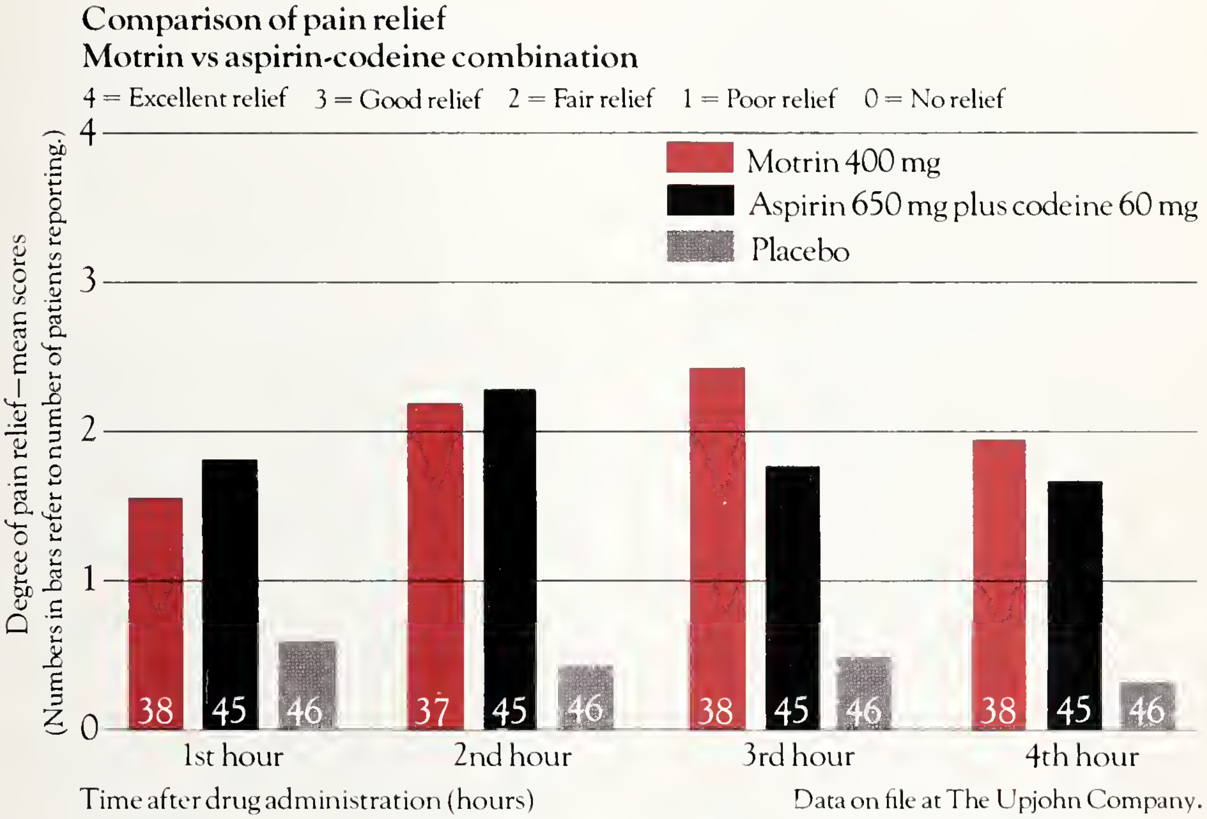
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Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

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THE DEMOGRAPHY AND HEALTH CONSEQUENCES OF VIOLENCE IN AN EMERGENCY ROOM SETTING

Thomas S. Nighswander, M.D., M.P.H.

Introduction

Events of the last few months have increased our awareness of violence and violent crime in America. Unfortunately, Alaska has not been immune to this epidemic.

The data are sobering. National statistics released at the end of March, 1981 by the F.B.I. show that violent crime has increased 13% in 1980 which is the largest yearly increase since 1974. In Anchorage, Chief of Police Brian Porter reported that in 1980 there were 15 homicides, 117 reported rapes, 296 robberies and 1589 assualts.[1] Unfortunately, significant numbers of violent crime come from every area of the state.

While the community at large is concerned, the greatest impact is on the individual who fears for his own safety and well being.

Recently, House Representative Russ Meekins called a State Legislative Task Force on violent crime. Data from a hospital emergency room was requested. This paper reviews this data for the first two and a half months of 1981.

The questions were posed as follows. Who are the victims of violence? What are the consequences of the violence? Are there associated environmental or social issues which are characteristic of the victim/violator?

Methods

The emergency room records from the Alaska Native Medical Center were reviewed from January 1, 1981 to March 15, 1981. Information was extracted from those patients whose injury resulted from another person's action. Also, cases of self-inflicted injury were included. The Alaska Native Medical Center's emergency room is one of four emergency rooms within the municipality. Therefore, it must be emphasized that this report represents only a proportion of injury caused by violence in the Anchorage community.

Seventy-eight cases of violence were reviewed. Fifty-nine were from the local area and nineteen were from outlying areas and evacuated to the Medical Center.

Results

Table 1 shows the age, sex and locality distribution of 78 cases. It is clear from this table that injury secondary to violence is predominately a problem of young males. Twenty-seven percent of the local patients and 42 percent of the out-of-town patients were males under the age of twenty-five. When both males and females are considered together, 44 percent of the local patients were under twenty-five and only 15 percent were over age forty.

Table 2 presents the time of injury for local patients. Twelve midnight to noon is disproportionately represented in this series containing 60 percent of all the cases.

Table 3 reviews the types and frequency of injuries. The most frequent injuries were lacerations. This represented 46 percent of the local cases. The next largest group were injuries resulting in fractures. These accounted for 29 percent of the local cases. For out-of-town patients, the most common injuries were penetrating wounds accounting for 53 percent of the cases.

Table 4 presents the agents or circumstances of injury. Sufficient details were available to obtain this information from forty-three of the local cases and

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Chief of Family Medicine Service, Alaska Native Medical Center.
November 24, 1981.

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sixteen of the out-of-town patients. Fighting, whether provoked or unprovoked, accounted for 51 percent of the local cases. Motor vehicle accidents accounted for an additional 30 percent. For patients evacuated to the Medical Center, 62 percent were self-inflicted, almost exclusively gunshot wounds.

Table 5 presents the length of stay for all patients. Fifty-eight percent of the local patients were treated in the emergency room and left the hospital soon after their visit. Unfortunately, 42 percent of the patients had to be admitted and of that group, 19 percent had a 9-day hospital stay or longer. For the out-of-town patients, only two (11 percent) were treated and released. Nine patients (36 percent) had hospital stays nine days or longer. At the time the study was written, two patients from this group had died and another had been hospitalized for 74 days.

Table 6 shows the amount of injury in local patients which was alcohol related. Forty-seven percent of all violence in men was associated with alcohol. The corresponding figure in women was 48 percent.

Discussion

This report covers a short time period and a limited population. It under-represents the magnitude of the problem in Alaska. Those killed by violent injury are not recorded in emergency room statistics. Additionally, only the most severly injured out-of-town patients are evacuated to the Medical Center. Most violent injuries will be managed by the rural hospital and also not be recorded in the statistics of the Medical Center. Additionally, the number of alcohol related cases is likely under-represented due to lack of reporting on the medical record.

However, it is clear that injury from violence is significant, producing permanent injury and death. In this particular group of patients, violence is more likely to occur at night, involve young men and be associated with alcohol.

While the inclusion of self-inflicted injury and auto accidents as acts of violence might be debated, these are acts of aggression frequently associated with alcohol. Anchorage Police Chief Brian Porter includes these numbers in his statistics on violence. In 1980 there were 24 traffic fatalities in the Municipality of Anchorage and 80 percent of those were related to alcohol abuse.

Episodes of violence are on the increase nationally. The average U.S. annual homicide death rate for men twenty-five to thirty-four years of age for 1959 to 1961 was 14.3/100,000. By 1969 to 1971 the rate had doubled to 28.3. In Cuyahuga County (Cleveland, Ohio), the rate tripled in the same time span from 22.3 to 67. During the period from 1969 to 1975, the homicide rate among city-dwelling non-white males, twenty-five to twenty-nine years of age, reached the appalling level of nearly four victims per thousand population. Homicide has now surpassed accidents as the leading cause of death in this group in Cleveland.[2]

Can something be done? Alcohol is clearly an issue. Alcohol as catalyst for violence has been implicated in the past.[3] We generally have failed to address this issue effectively. Recent attempts have been made by communities to control access to alcohol. Anchorage has recently limited the hours of sale of alcohol. A study is currently underway to determine if alcohol related injury will be reduced. Several communities have voted for complete prohibition while others have forbidden sales. Reports from these villages suggest a decrease in injury secondary to alcohol. Greenland has introduced a rationing system for alcohol for all its citizens. No evaluations are yet available for this program.

In addition to controlling access, the community can enforce current laws against serving to minors, serving to intoxicated persons and driving while intoxicated. However, there are limits to this approach. It takes a great deal of police manpower and frankly, some communities have been unwilling to support the laws.

Forty percent of the local patients were twenty-five or under. This produces speculation about the age and mechanism by which violent behavior is learned. Dr. A.R. Somers, in calling attention to the alarming increases in homicide rates observed among children and teenagers, implicates a "culture of violence" which has become a way of life for large segments of the nation's youth. She maintains that television's daily diet of synthetic crime and violence is a contributing factor.[4]

One must also ask about the coping skills of the youth. Where did they learn them? Is there anything more that the schools and community can do to promote coping behavior?

Unfortunately, there are no immediate answers to the problems of violence. It is imperative that as individuals and communities we seek solutions to the epidemic of violence and violent crime.

Table 1. Age and Sex Distribution of 78 Injured Patients

	Local Patients						Out-of-Town Patients					
Age Group	Males	Percent	Females	Percent	Total	Percent	Males	Percent	Females	Percent	Total	Percent
19 & Under	6	10%	2	3%	8	13%	4	21%	2	10%	6	31%
20 - 25	11	17%	7	12%	18	31%	4	21%	0	0	4	21%
26 - 30	3	5%	3	5%	6	10%	2	10%	0	0	2	10%
31 - 35	5	8%	8	14%	13	22%	4	21%	0	0	4	21%
36 - 40	5	8%	0	0	5	8%	3	16%	0	0	3	16%
41 - 45	4	7%	0	0	4	7%	0	0	0	0	0	0
46 - 55	0	0	0	0	0	0	0	0	0	0	0	0
Over 56	2	5%	3	5%	5	8%	0	0	0	0	0	0
Total	36	60%	23	39%	59	99%	17	89%	2	10%	19	99%

Table 2. Time of Injury in 59 Local Patients Whose Injury was Secondary to Violence

Time	Number of Cases	Percentage
Midnight to Noon	35	60%
Noon to Midnight	23	40%
Unknown	1	

Table 3. Injuries Resulting From Violent Episodes

	Local Patients		Out-of-Town Patients	
	Number	Percent	Number	Percent
Lacerations	27	46	1	5
Fractures	17	29	3	16
Skull	(5)		(1)	
Upper Extremity	(3)			
Lower Extremity	(9)		(2)	
Rape	3	5	0	
Contusions	3	5	3	16
Penetrating Wound	3	5	10	53
Head Injury - Non Specific	3	5	1	5
Hypothermia	2	3	0	
Multiple Trauma	1	2	1	5
Total	59		19	

Table 4. Agents or Circumstances of Injury *if* *Known*

	Local Patients		Out-of-Town Patients	
	Number	Percent	Number	Percent
Fighting with another Person	12	28	1	6
Unprovoked Assault	10	23	2	13
Motor Vehicle Accident	13	30	2	13
In Vehicle	(7)		(1)	
Hit by Vehicle	(6)		(1)	
Self Inflicted	3	7	5	31
Gun Shot Wound by Another Person	2	5	5	31
Human Bite	3	7	1	6
Total	43		16	

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Table 5. Length of Hospitalization or Treatment of 78 Patients Whose Injury was a Result of Violence

Length of Hospitalization	Number of Patients			
	Local Patients		Out-of-Town Patients	
	Number	Percent	Number	Percent
Treated and Released	34	58	2	11
1 to 4 Days	8	14	2	11
5 to 8 Days	6	10	5	26
9 to 12 Days	8	14	1	5
13 to 16 Days	2	3	1	5
Over 16 Days	1	2	5	26
Deaths	0		2	11
Unknown	0		1	5
Total	59		19	

Table 6. Alcohol Associated Violent Injuries in 59 Local Patients

	Males			Females			Total		
Age Group	Number	Intox- icated	% Intox- icated	Number	Intox- icated	% Intox- icated	Number	Intox- icated	% Intox- icated
19 & Under	6	3	50%	2	0	0%	8	3	38%
20 - 25	11	6	55%	7	5	71%	18	11	61%
26 - 30	3	0	0%	3	2	67%	6	2	33%
31 - 35	5	1	20%	8	3	38%	13	4	31%
36 - 40	5	4	80%	0	0	0%	5	4	80%
41 - 45	4	2	50%	0	0	0%	4	2	50%
46 - 50	0	0	0%	0	0	0%	0	0	0%
51 - 55	0	0	0%	0	0	0%	0	0	0%
Over 56	2	1	50%	3	1	33%	5	2	40%
Total	36	17	47%	23	11	48%	59	28	47%

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A Letter To The Editor:

Please express my heartfelt gratitude to the Alaska State Medical Association for awarding me an Honorary Membership in the Alaska State Medical Association. Resolution 81-14, adopted at the 1981 Annual Meeting and passed unanimously, was very kind in its commendation.

I must say that having been associated with Alaska since 1935 in a professional capacity has been most rewarding and I hope that it has been of benefit to many people of Alaska, my professional associates and the Alaska State Medical Association.

I recall with much satisfaction the role that I played in getting the Medical Association for Alaska started. While Commissioner of Health I visited each community and became acquainted with the physicians. Many were disassociated with physicians in other communities. I felt this was unfortunate so promoted and supported the establishment of a statewide association.

Today there are, to the best of my knowledge, only four remaining physicians from those early days. They are Dr. Paul Haggland of Fairbanks, Dr. Joseph Rudd of Juneau, Dr. Arthur Wilson, Sr. of Ketchikan and myself of Anchorage.

I plan to continue my professional activities in the state and if there is any contribution that I can make, please have the Association call upon me.

Sincerely,

C. Earl Albrecht

C. Earl Albrecht, M.D.

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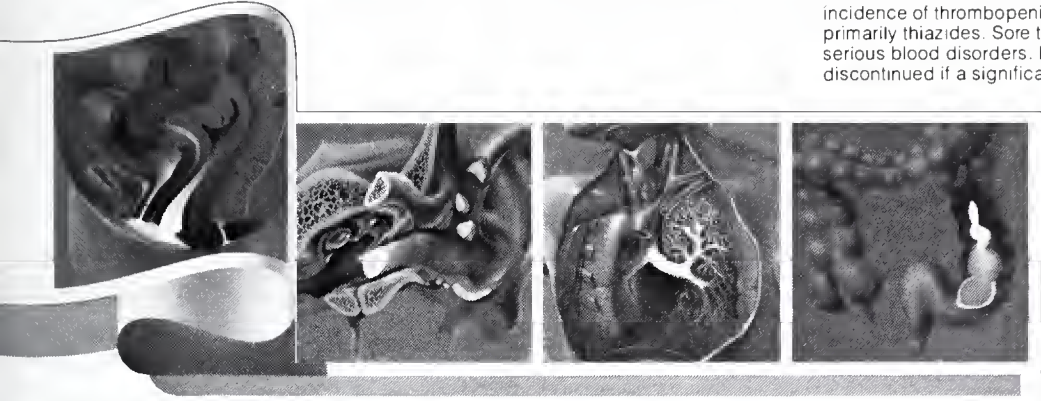
(trimethoprim and sulfamethoxazole)
# succeeds

Bactrim is useful for the following infections when due to susceptible strains of indicated organisms (see indications section in summary of product information):

Expanding its usefulness in antimicrobial therapy



in recurrent UTI...
a continuing record of high clinical effectiveness against common uropathogens

in acute otitis media in children...
effective against both major otic pathogens...with *b.i.d.* convenience

in acute exacerbations of chronic bronchitis in adults...
clears the sputum and lowers its volume...on *b.i.d.* dosage

in shigellosis...
faster relief of diarrhea than with ampicillin[2]

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus* morganii. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. Limited clinical information presently available on effectiveness of treatment of otitis media with Bactrim when infection is due to ampicillin-resistant *Haemophilus influenzae*. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella* sonnei when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis. To date, this drug has been tested only in patients 9 months to 16 years of age who were immunosuppressed by cancer therapy.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: *General:* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: *Double Strength (DS) tablets*, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose® packages of 100; Prescription Paks of 20 and 28. *Tablets*, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40. *Pediatric Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry-flavored—bottles of 100 ml and 16 oz (1 pint). *Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).

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1. Rubin RH, Swartz MN: *N Engl J Med 303* 426-432, Aug 21, 1980 2. Data on file, Medical Department, Hoffmann-La Roche Inc.

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*due to susceptible strains of indicated organisms

Please see previous page for summary of product information.

ALASKA MEDICINE

Volume 24, Number 2
March/April 1982

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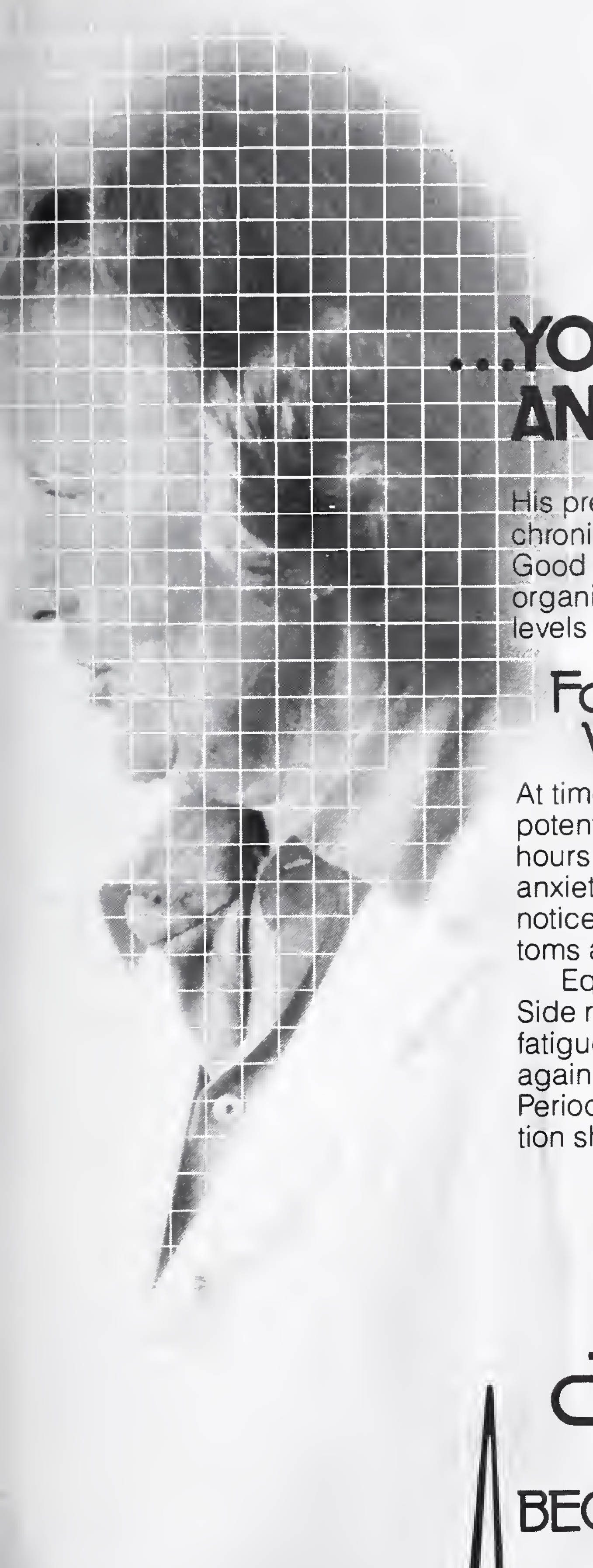
THE PATIENT THINKS HE HAS HEART TROUBLE...



...YOU KNOW IT'S REALLY ANXIETY SYMPTOMS

His presenting symptoms: palpitations, chest pain, chronic exhaustion and occasional difficulties in breathing. Good reason for concern. A complete workup uncovers no organic dysfunction, but it *does* reveal excessively high levels of anxiety and apprehension.

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diazepam/Roche
2-mg, 5-mg, 10-mg scored tablets

BECAUSE YOU'RE CONVINCED THE PATIENT NEEDS IT

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VALIUM®(diazepam/Roche)

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The effectiveness of Valium (diazepam/Roche) in long-term use, thal is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.
Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma. may be used in patients with open angle glaucoma who are receiving appropriate therapy
Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally al higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

> *Usage in Pregnancy:* **Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Precautions: If combined with other psycholropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its aclion. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear
Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, conslipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-lerm therapy
Dosage: Individualize for maximum beneficial effect. *Adults*. Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d., adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months)
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EDITORIAL

As of January, 1982, the ten year editor of **Alaska Medicine**, Dr. John Kottra, stepped aside to other professional endeavors. During his tenure as editor many fine photographs graced the Journal's cover and myriads of medical manuscripts were perused. Dr. Kottra's fine work was not done alone. Ms. Gwynneth Wilson spent countless hours pouring over articles correcting grammatical errors, restructuring sentences and editing manuscripts enabling easy readibility. Many thanks to these two industrious individuals.

New editors are synonymous with change and the present is no exception. Before undertaking editorship of the Journal I thumbed through past issues looking for ideas. Many concepts were rediscovered as well as new ideas formed. Reinstitution of letters to the editor, Mucktuk Morsel format, as well as state and local news will be published. Postgraduate course announcements, physician self-assessment, case reports, along with original articles will be encouraged.

My plea is to you, the physician subscriber, to submit manuscripts and letters. This is your journal, please support it.

William H. Bowers, M.D.
Editor

ALASKA MEDICINE

Official Journal of the Alaska State Medical Association

4107 Laurel, Anchorage, Alaska 99504

Volume 24 March/April 1982 Number 2

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ALASKA MEDICINE is the bi-monthly journal of the Alaska State Medical Association; Alaska Medicine, 4107 Laurel, Anchorage, Alaska 99504. *ALASKA MEDICINE* is printed by Northern Printing Co., Inc., 655 Warehouse Avenue, Anchorage, Alaska 99501.
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About the cover: *Snowshoe Hare in October* by Mark Newman, M.D.

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RESULTS OF A NUTRITION INTERVENTION PROGRAM:

THE WIC PROGRAM IN ALASKA

Joan M. Pelto

Adapting a program designed for areas with concentrated population to a State the size of Alaska, with its thinly spaced population, creates problems and challenges.

The distribution of the 400,000 people of the State is primarily in a few urban centers. The population of Anchorage is half the total State population. Another quarter of the people live in towns and villages with populations from a few dozen to a few thousand. Planning and delivering a supplemental food program to this latter group, where some of the greatest needs are found, is often frustrating but never dull.

The USDA Special Supplemental Food Program for Women, Infants and Children (WIC) began in the U.S. in 1973. The first Alaska WIC programs were in the North Slope villages of Barrow, Wainwright, Nuiqsut and Point Lay. Currently the Wic program serves six population centers in Alaska: North Slope (1974), Southeast (Juneau) (1975), Anchorage (1977), Maniilaq (Kotzebue) (1979), Fairbanks (1980) and Norton Sound (Nome) (1981).

WIC participants must meet the dual requirements of low income and nutritional risk. Pregnant and lactating women, infants and children to age 5 are served by WIC. Once applicants are certified to meet both income and risk criteria they enter into a nutrition education program. They receive vouchers for prescribed nutritious foods and are scheduled for participation in nutrition education sessions. The education is geared to the specific nutrition needs of the participants. Each WIC participant is certified for six month periods, with the exception of pregnant women who are certified through their pregnancy and six weeks postpartum. At each subsequent certification both risk and income criteria must be met or the participant is "graduated" from the program.

WIC supplemental foods, prescribed for voucher purchase, have been selected (Federal Register Vol. 45, No. 220, November 12, 1980) to provide different essential nutrients. The foods in the WIC Food Package and the leader nutrients in each are found in Table 1.

TABLE 1. WIC Foods and Leader Nutrients

FOOD	LEADER NUTRIENTS
Infant Formula	Complete food for infants
Infant Juice	Vitamin C, Vitamin A
Infant Cereal	Iron, Carbohydrate
Milk and/or Cheese	Calcium, Vitamin D, Thiamine, Riboflavin, Essential Fatty Acids, Protein, Carbohydrate
Iron Fortified Cereals (at least 40% USRDA/serving for iron)	Iron, Carbohydrate
Fruit Juice (a 6 oz. serving must provide at least 90% of the USRDA for Vitamin C for adults)	Vitamin C, Vitamin A
Eggs	Protein, Iron, Vitamin A

Findings from studies in three areas of Alaska served by the WIC program have shown encouraging results. Actual change in the health status of the population being served has been assessed and used as an indicator of improved health.

Results of longitudinal studies (Peterson, 1981) of children in Wainwright, a predominantly Eskimo village of 375 people, show significant changes after the

---

Alaska Department of Health and Social Services. Juneau, Alaska 1981.

introduction of the WIC program. This was shown in studies of the health determinants of height for age and hemoglobin levels of children under age 5 years. The studies were done first in 1968 and again in 1977.

In 1968 the children's mean length at birth was below the 40th percentile, falling lower with older children. In the 1977 study, length at birth was at the 55th percentile and fell only to the 50th percentile at age 5. The conclusions of the research team were that infants were born longer at birth and were staying that way. This is a valid indicator of good nutritional status. Anemia, determined by hemoglobin values less than 11.0 grams/d1, was found in 68 per cent of the children under age 5 in 1968. In 1977 only 18 per cent were found to be anemic (7 of 39 children).

In all probability WIC alone cannot be given credit for all of the improvements seen in the children in Wainwright. During the same time period that WIC was being started in the North Slope, there was increased emphasis being placed on health care in the area. Village water supplies were being improved, more health care was available to the villages, and improved transportation brought more food to village stores. But WIC, with iron fortified foods plus vitamin C rich foods to enhance iron absorption, must be given a significant amount of the credit for the observed changes in the nutritional status of the children in Wainwright.

Iron deficiency anemia is a major public health problem in Alaska. Change from the traditional native diet to a diet containing many foods of low nutrient density has been blamed for the high incidence of anemia. The WIC program utilizies iron fortified foods plus nutrition education to treat those certified to participate due to anemia.

A survey of food shipped to Wainwright in each of the two years of the longitudinal study showed a shift away from staple foods, e.g. flour, sugar, oatmeal, to processed foods. The glaring change was in soft drinks. In 1968, 14,400 cans of soft drinks were shipped to Wainwright. In 1977 the number had soared to 211,000. However, as can be seen by the reduced incidence of anemia in the children of Wainwright, the availability of iron rich foods can contribute to improved nutritional status even in the presence of increased availability of foods of poor nutritional value.

Results of participation in the WIC program itself have been assessed in two urban clinics; Anchorage and Juneau. Chart reviews were the source of all information. In each area improved nutritional status was observed.

A review of the charts of the 219 participants in the Anchorage WIC program who had been certified for six months or more and met the criteria for one of the top three WIC priorities, (Hillstrand, 1979) showed mean hemoglobin values of 10.7 g/d1 at time of certification for WIC. The mean values had increased to 11.6 g/d1 at the subsequent certification assessment after six months participation in the WIC program. The 219 were of the 1,074 Anchorage WIC participants at that time.

Figure 1 shows the means and ranges of hemoglobin values at the two different times. It can be seen that greater increases occurred at the lower end of the range of values; while there was some increase at the upper end.

Children were the largest number represented in the group; 58 per cent. There were 13 per cent women and 29 per cent infants in the group.

A review was done of the records of the 27 children having been certified, in February 1981, for six months or more in the Juneau WIC program. (Pelto, 1981). Significant improvement in nutritional status, as indicated by increased hemoglobin values, was noted.

Of the 27 children whose records were reviewed, two did not have hemoglobin values taken at initial certification; being certified due to obesity rather than undernutrition. Five other children had normal hemoglobin values at initial certification and remained within norml limits after six months. Two of the remaining 20 children were initially certified with normal hemoglobin values and became anemic within the six month period. The 18 children certified as anemic all showed improved hemoglobin values at the end of the six month period. The average increase was 13.7 per cent, ranging from two to thirty-one per cent change.

Figure 2 shows the means and the ranges of hemoglobin values for the 25 children for whom the

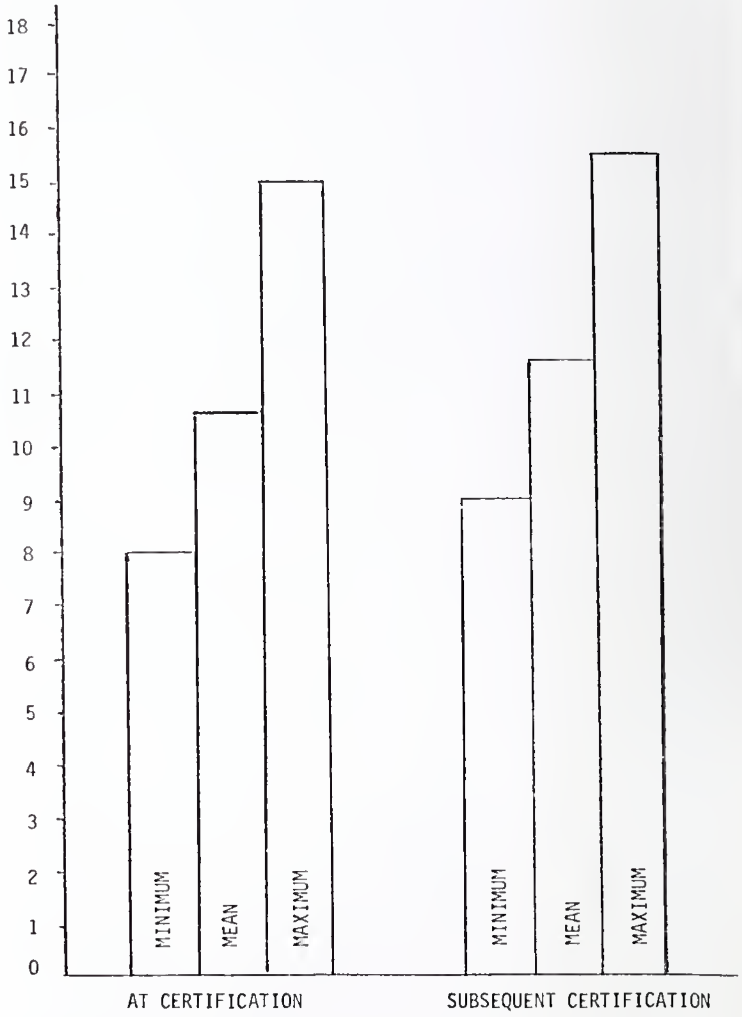

Figure 1. Hemoglobin values of 211 WIC participants at certification and subsequent certification (after 6 months). Anchorage Alaska, 1979.

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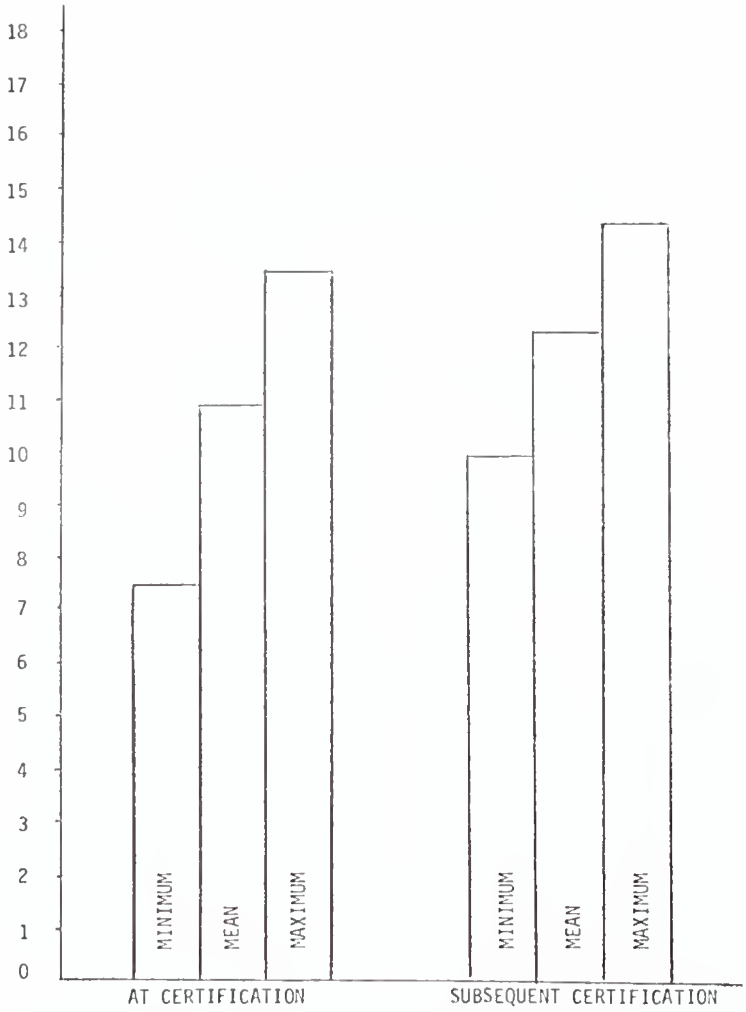

Figure 2. Hemoglobin values of 25 children (age 1 to 5 years) in the Juneau WIC Program; At certification and subsequent certification. February, 1981

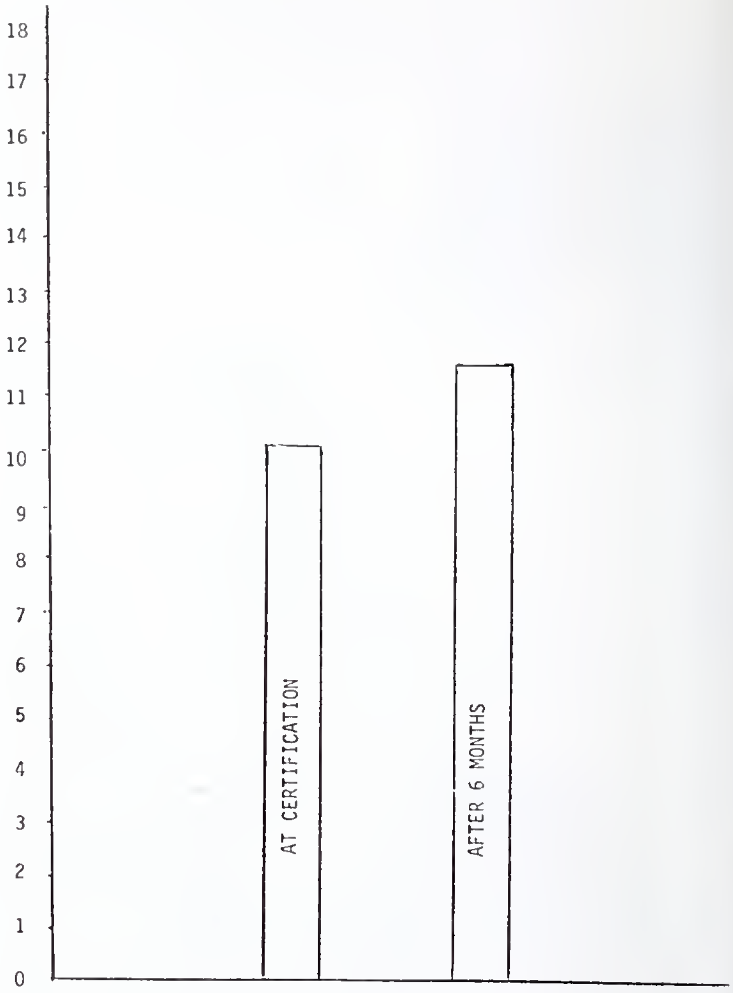

Figure 3. Mean hemoglobin values of 15 children in the Juneau WIC Program; Certified due to anemia; at certification and subsequent certification. February, 1981.

data was available. The mean hemoglobin value at time of certification was 10.9 g/d1. At subsequent certification, ie. after six months participation in the WIC program, the mean hemoglobin values had increased to 12.3.

Figure 3 shows mean hemoglobin values for 15 of the Juneau WIC children whose sole nutritional risk factor, ie. the reason for being certified as a WIC participant, was anemia. A mean increase of 1.6 g/d1 can be seen for these children.

As part of an ongoing data collection process, the incidence of low birthweight infants, ie. below 2,500 gms, in Alaska has been tabulated. Due to the small population, thus small total numbers, three year running averages were determined. Figure 4 shows the incidence of low birthweight infants in the State and the regions with State WIC programs. Each region is noted with "WIC" in the year when the WIC program started. The most dramatic change over time can be seen in the North Slope region. A drop from 11.1 per cent of all live births in 1974 to 8.6 in 1978 is dramatic. While still much above the State rate of 5.9 and 5.2 per cent in the same years, this change is important. Surely some of the incidence of low birthweight infants can be credited to the role played by WIC in the prenatal care of the mothers in the North Slope Region.

Instant solutions to public health problems are often sought but not often attained. These examples of some improvements in nutritional status should show that, while not instant, the solutions may be within reach.

THE WIC PROGRAM - A BRIEF SUMMARY

WHAT IS WIC?

The Special Supplemental Food Program for Women, Infants and Children (USDA) provides nutrition education and prescribed supplemental foods to eligible participants.

WHO IS ELIGIBLE TO PARTICIPATE IN WIC?

Pregnant or Lactating Women, Infants and Children (up to their fifth birthday) who meet USDA low income requirements and are found to be at nutritional risk.

HOW DOES A POTENTIAL PARTICIPANT GET TO THE WIC PROGRAM?

Referrals from health providers (pads of referral forms are available from local WIC offices).

Word of mouth - from other participants.

WHAT INFORMATION SHOULD THE HEALTH PROVIDER INCLUDE IN A REFERRAL?

Accurate height or length
Accurate weight; prepregnancy weight
Hemoglobin or Hematocrit value
Medical reason for referral (if any)

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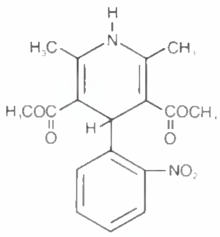
nifedipine

DESCRIPTION: PROCARDIA (nifedipine) is an antianginal drug belonging to a new class of pharmacological agents, the calcium channel blockers. Nifedipine is 3,5-pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(2-nitrophenyl)-, dimethyl ester, $C_{17}H_{18}N_2O_6$, and has the structural formula:



Nifedipine is a yellow crystalline substance, practically insoluble in water but soluble in ethanol. It has a molecular weight of 346.3. PROCARDIA CAPSULES are formulated as soft gelatin capsules for oral administration each containing 10 mg nifedipine.

CLINICAL PHARMACOLOGY: PROCARDIA (nifedipine) is a calcium ion influx inhibitor (slow channel blocker or calcium ion antagonist) and inhibits the transmembrane influx of calcium ions into cardiac muscle and smooth muscle. The contractile processes of cardiac muscle and vascular smooth muscle are dependent upon the movement of extracellular calcium ions into these cells through specific ion channels. PROCARDIA selectively inhibits calcium ion influx across the cell membrane of cardiac muscle and vascular smooth muscle without changing serum calcium concentrations.

Mechanism of Action: The precise means by which this inhibition relieves angina has not been fully determined, but includes at least the following two mechanisms:

1) Relaxation and prevention of coronary artery spasm: PROCARDIA dilates the main coronary arteries and coronary arterioles, both in normal and ischemic regions, and is a potent inhibitor of coronary artery spasm, whether spontaneous or ergonovine-induced. This property increases myocardial oxygen delivery in patients with coronary artery spasm, and is responsible for the effectiveness of PROCARDIA in vasospastic (Prinzmetal's or variant) angina. Whether this effect plays any role in classical angina is not clear, but studies of exercise tolerance have not shown an increase in the maximum exercise rate-pressure product, a widely accepted measure of oxygen utilization. This suggests that, in general, relief of spasm or dilation of coronary arteries is not an important factor in classical angina.

2) Reduction of oxygen utilization: PROCARDIA regularly reduces arterial pressure at rest and at a given level of exercise by dilating peripheral arterioles and reducing the total peripheral resistance (afterload) against which the heart works. This unloading of the heart reduces myocardial energy consumption and oxygen requirements and probably accounts for the effectiveness of PROCARDIA in chronic stable angina

Pharmacokinetics and Metabolism: PROCARDIA is rapidly and fully absorbed after oral administration. The drug is detectable in serum 10 minutes after oral administration, and peak blood levels occur in approximately 30 minutes. It is highly bound by serum proteins. PROCARDIA is extensively converted to inactive metabolites and approximately 80% of PROCARDIA and metabolites are eliminated via the kidneys. The half-life of nifedipine in plasma is approximately two hours. There is no information on the effects of renal or hepatic impairment on excretion or metabolism of PROCARDIA.

Hemodynamics: Like other slow channel blockers, PROCARDIA exerts a negative inotropic effect on isolated myocardial tissue. This is rarely, if ever, seen in intact animals or man, probably because of reflex responses to its vasodilating effects. In man, PROCARDIA causes decreased peripheral vascular resistance and a fall in systolic and diastolic pressure, usually modest (5–10 mm Hg systolic), but sometimes larger. There is usually a small increase in heart rate, a reflex response to vasodilation. Measurements of cardiac function in patients with normal ventricular function have generally found a small increase in cardiac index without major effects on ejection fraction, left ventricular end diastolic pressure (LVEDP) or volume (LVEDV). In patients with impaired ventricular function, most acute studies have shown some increase in ejection fraction and reduction in left ventricular filling pressure.

Electrophysiologic Effects: Although, like other members of its class, PROCARDIA decreases sinoatrial node function and atrioventricular conduction in isolated myocardial preparations, such effects have not been seen in studies in intact animals or in man. In formal electrophysiologic studies, predominantly in patients with normal conduction systems, PROCARDIA has had no tendency to prolong atrioventricular conduction, prolong sinus node recovery time, or slow sinus rate.

INDICATIONS AND USAGE: I. Vasospastic Angina: PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation, 2) angina or coronary artery spasm provoked by ergonovine, or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm, or when angina is refractory to nitrates and/or adequate doses of beta blockers.

II. Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta-blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs. (See Warnings.)

CONTRAINDICATIONS: Known hypersensitivity reaction to PROCARDIA.

WARNINGS: Excessive Hypotension: Although in most patients, the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment, and may be more likely in patients on concomitant beta blockers.

Increased Angina/Beta Blocker Withdrawal: Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone.

Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation. It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA.

Congestive Heart Failure: Rarely, patients usually receiving a beta blocker have developed heart failure after beginning PROCARDIA. Patients with tight aortic stenosis may be at greater risk for such an event, as the unloading effect of PROCARDIA would be expected to be of less benefit to these patients, owing to their fixed impedance to flow across the aortic valve.

PRECAUTIONS: General: Hypotension: Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. See Warnings.

Peripheral edema: Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA. This edema occurs primarily in the lower extremities and usually responds to diuretic therapy. With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

Drug interactions: Beta-adrenergic blocking agents: See Indications and Warnings. Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina.

Long-acting nitrates: PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination.

Carcinogenesis, mutagenesis, impairment of fertility: Nifedipine was administered orally to rats for two years and was not shown to be carcinogenic. When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose. *In vivo* mutagenicity studies were negative.

Pregnancy: Pregnancy category C. Nifedipine has been shown to be teratogenic in rats when given in doses 30 times the maximum recommended human dose. Nifedipine was embryotoxic (increased fetal resorptions, decreased fetal weight, increased stunted forms, increased fetal deaths, decreased neonatal survival) in rats, mice and rabbits at doses of from 3 to 10 times the maximum recommended human dose. In pregnant monkeys, doses 2/3 and twice the maximum recommended human dose resulted in small placentas and underdeveloped chorionic villi. In rats, doses three times the maximum human dose and higher caused prolongation of pregnancy. There are no adequate and well-controlled studies in pregnant women. PROCARDIA should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

ADVERSE REACTIONS: In multiple-dose U.S. and foreign-controlled studies in which adverse reactions were reported spontaneously, adverse effects were frequent but generally not serious and rarely required discontinuation of therapy or dosage adjustment. Most were expected consequences of the vasodilator effects of PROCARDIA.

Adverse Effect	**PROCARDIA (%) (N = 226)**	**Placebo (%) (N = 235)**
Dizziness, light-headedness, giddiness	27	15
Flushing, heat sensation	25	8
Headache	23	20
Weakness	12	10
Nausea, heartburn	11	8
Muscle cramps, tremor	8	3
Peripheral edema	7	1
Nervousness, mood changes	7	4
Palpitation	7	5
Dyspnea, cough, wheezing	6	3
Nasal congestion, sore throat	6	8

There is also a large uncontrolled experience in over 2100 patients in the United States. Most of the patients had vasospastic or resistant angina pectoris, and about half had concomitant treatment with beta-adrenergic blocking agents. The most common adverse events were the same ones seen in the controlled trials, with dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%. Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication. Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

Several of these side effects appear to be dose related. Peripheral edema occurred in about one in 25 patients at doses less than 60 mg per day and in about one patient in eight at 120 mg per day or more. Transient hypotension, generally of mild to moderate severity and seldom requiring discontinuation of therapy, occurred in one of 50 patients at less than 60 mg per day and in one of 20 patients at 120 mg per day or more.

In addition, 2% or fewer of patients reported the following: **Respiratory:** Nasal and chest congestion, shortness of breath. **Gastrointestinal:** Diarrhea, constipation, cramps, flatulence. **Musculoskeletal:** Inflammation, joint stiffness, muscle cramps. **CNS:** Shakiness, nervousness, jitteriness, sleep disturbances, blurred vision, difficulties in balance. **Other:** Dermatitis, pruritus, urticaria, fever, sweating, chills, sexual difficulties.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

In a subgroup of over 1000 patients receiving PROCARDIA with concomitant beta blocker therapy, the pattern and incidence of adverse experiences was not different from that of the entire group of PROCARDIA treated patients (see **Precautions**).

In a subgroup of patients with a diagnosis of congestive heart failure as well as angina, dizziness or light-headedness, peripheral edema, headache or flushing each occurred in one in eight patients. Hypotension occurred in about one in 20 patients. Syncope occurred in approximately one patient in 250. Myocardial infarction or symptoms of congestive heart failure each occurred in about one patient in 15. Atrial or ventricular dysrhythmias each occurred in about one patient in 150.

Laboratory tests: Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CK, LDH, SGOT, and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy. The relationship to PROCARDIA therapy is uncertain. These laboratory abnormalities have already been associated with clinical symptoms. Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature.

OVERDOSAGE: Although there is no well documented experience with PROCARDIA overdosage, available data suggest that gross overdosage could result in excessive peripheral vasodilation with subsequent marked and probably prolonged systemic hypotension. Clinically significant hypotension due to PROCARDIA overdosage calls for active cardiovascular support including monitoring of cardiac and respiratory function, elevation of extremities, and attention to circulating fluid volume and urine output. A vasoconstrictor (such as norepinephrine) may be helpful in restoring vascular tone and blood pressure, provided that there is no contraindication to its use. Clearance of PROCARDIA would be expected to be prolonged in patients with impaired liver function. Since PROCARDIA is highly protein-bound, dialysis is not likely to be of benefit.

DOSAGE AND ADMINISTRATION: The dosage of PROCARDIA needed to suppress angina and that can be tolerated by the patient must be established by titration. Excessive doses can result in hypotension.

The starting dose is one 10 mg capsule, swallowed whole, 3 times/day. The usual effective dose range is 10–20 mg three times daily. Some patients, especially those with evidence of coronary artery spasm, respond only to higher doses, more frequent administration, or both. In such patients, doses of 20–30 mg three or four times daily may be effective. Doses above 120 mg daily are rarely necessary. More than 180 mg per day is not recommended.

In most cases, PROCARDIA titration should proceed over a 7–14 day period so that the physician can assess the response to each dose level and monitor the blood pressure before proceeding to higher doses.

If symptoms so warrant, titration may proceed more rapidly provided that the patient is assessed frequently. Based on the patient's physical activity level, attack frequency, and sublingual nitroglycerin consumption, the dose of PROCARDIA may be increased from 10 mg t.i.d. to 20 mg t.i.d. and then to 30 mg t.i.d. over a three-day period.

In hospitalized patients under close observation, the dose may be increased in 10 mg increments over four to six-hour periods as required to control pain and arrhythmias due to ischemia. A single dose should rarely exceed 30 mg.

No "rebound effect" has been observed upon discontinuation of PROCARDIA. However, if discontinuation of PROCARDIA is necessary, sound clinical practice suggests that the dosage should be decreased gradually with close physician supervision.

Co-Administration with Other Antianginal Drugs: Sublingual nitroglycerin may be taken as required for the control of acute manifestations of angina, particularly during PROCARDIA titration. See **Precautions, Drug Interactions** for information on co-administration of PROCARDIA with beta blockers or long-acting nitrates.

HOW SUPPLIED: Each orange, soft gelatin PROCARDIA Capsule contains 10 mg of nifedipine. PROCARDIA Capsules are supplied in amber glass bottles of 100 capsules (NDC 0069-2600-66).

The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77°F (15° to 25°C) in the manufacturer's original container.

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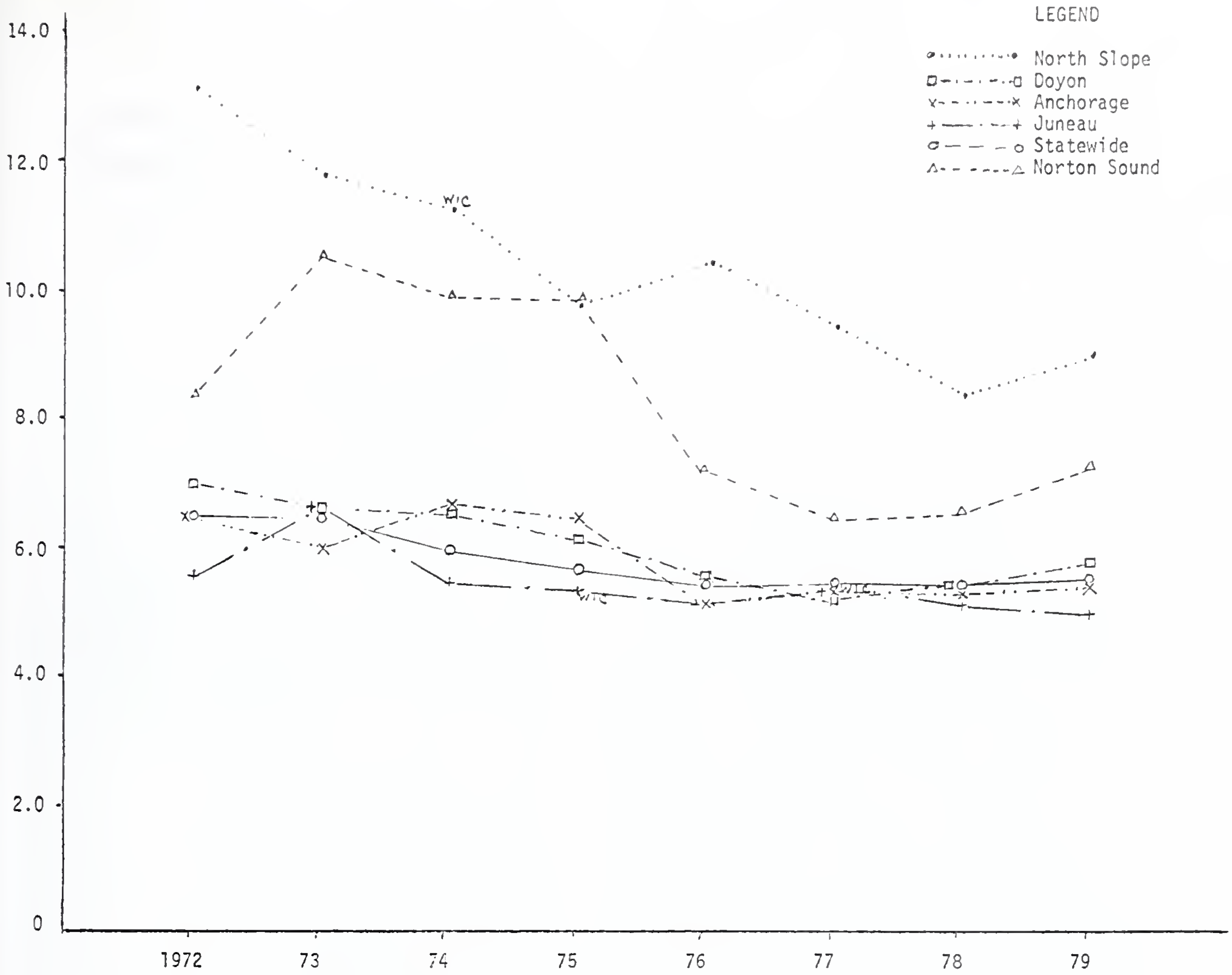

Figure 4. Incidence of low birthweight infants (< 2,500 gms), 3 year running averages, 1970 - 79, State of Alaska and selected regions.

WHERE CAN YOU GET MORE INFORMATION OR REFER POTENTIALLY ELIGIBLE PERSONS?

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Juneau Phone: 465-3110

Fairbanks WIC Program
Fairbanks Health Center
800 Airport Way
Fairbanks
Phone: 452-1776

North Slope WIC Program
(Serves Barrow, Wainwright & Nuiqsut)
North Slope Health & Social Services Agency
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Kotzebue
Phone: 442-3311

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Norton Sound Regional Health Corp.
Nome
Phone: 443-5411

FURTHER INQUIRIES MAY BE MADE TO THE STATE WIC OFFICE IN JUNEAU (Phone: 465-3103)

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FAMILIAL EARLY PROFOUND DEAFNESS IN AN ATHABASCAN KINDRED

Dan Slaby

Introduction

Rural Alaskan Athabascan communities range in size from 25 to 500 individuals. Although community members are mobile, seeking wage related employment or education training elsewhere, family relationships extend over a relatively large geographic area (1). In some groups, even today, prescriptive or preferential marriage rules still apply. The apparent continuation of this practice enables continued familial control over subsistence use areas. Related marriages also increases the possibilities of rare and recessive genetic disorders appearing in these small closely related village populations.

In one Athabascan village, the collection of reproductive histories and geneologies from childbearing females resulted in the identification of autosomal recessive deafness in two related families (2). This retrospective study provides an example of the loss of fitness due to increased homozygosity at those loci for which homozygotes are less fit than heterozygotes (3).

Methods and Materials

Family geneologies and reproductive histories were collected with the assistance of the local Community Health Aide as a part of an over-all study of the health, growth and genetics of a rural Alaskan Athabascan village. Simple physical examinations were conducted to evaluate health status. The results of the physical examinations were compared with medical histories to determine historical trends of individual health status.

Family History and Construction of the Pedigree

The family health history was found to be an indispensible component of the physical examinations and aided in developing an over-all picture of the individual's health status. It was through the collection of the family history that the probands were identified and the collection of a geneology indicated. As with the delivery of primary health care, the Community Health Aide was an important and indispensable source of health information in the village (4). In this particular case, the children affected with early profound deafness were born to two related families. The fathers of the probands were brothers who married their first cross-cousins once removed, who also were sisters. Using Fisher's formula for calculating the inbreeding index, the probands have an inbreeding coefficient of 1/32, or .0313. Since no previous history of early profound deafness lies in the pedigree, it can be assumed that such individuals did not exist (or survive) within the family geneology (which would be consistent with the inheritance of an autosomal recessive disorder). The possibility that infant mortality had excluded previous probands from the pedigree can not be ruled out. In the pedigree, the ratio of the affected individuals closely approximates the expected Mendelian ratio for recessivity. Although another etiology may underly the appearance of these three related cases of early profound deafness, the pedigree is most consistent with autosomal recessive deafness.

The clinical manifestation of this recessive trait was derived from medical records available from the Community Health Aide and Public Health Nurse. A medical history was evaluated to determine the possibility that *Otitis media* could explain the occurrence of early profound deafness in all three probands. In all three probands, the onset, or recognition, of deafness occurred at about 18 months of age. Each of the probands have had subsequent recorded bouts of *Otitis media* as is common with rural village children, but deafness was already established at the first time of treatment for middle ear infection. Other medical problems were comparable for children of similar ages.

The parents of the probands have a medical history indicative of the types of problems encountered by the village populations during the last few decades of culture change. However, one parent was diagnosed with a case of neurosensory deafness with an age of onset approximately 60 years.

Other village children had frequent and pervasive experience with *Otitis media*. Although hearing loss characteristic of middle ear infection was identified by school hearing tests as prevalent among other children, there were no other cases of early profound deafness among the other children in the village.

Discussion

Early profound deafness is a social and educational problem (5), and is characterized by deafness of an early onset sufficient in degree to require special educational methods for learning speech or visual communication (5). Many problems prevent an unambiguous biological classification of early profound deafness (6). The ages of the probands at which a definite diagnosis is established complicates its assignment to the congenital or post-natal period. The medical history of the probands presented in the pedigree described suggest that the homozygous recessive deafness is of an early onset with rapid progression, but the contributory effects of recurrent bouts of *Otitis media* can't be ruled out. The appearance of profound neurosensory deafness in one of the parents may suggest that the heterozygous state either delays the onset to adult age, or slows the rate of progression.

The etiology of early profound deafness has been attributed to a wide variety of genetic and non-genetic factors (3). Family pedigrees illustrating dominant, recessive and sex-linked modes of inheritance are found in the extensive literature on deafness (6). Chromosomal aberrations have also been associated with deafness. The etiology of early profound deafness is particularly complex because exogenous factors such as infectious diseases, trauma, and oto-toxic drugs may be involved. The problem of etiology is further complicated by an inability to make direct anatomical observations for abnormalities, and the mechanism of developmental and/or functional abnormality can not be ascertained. Reliance on the indirect evidence of family histories, hospital and school records, and incidental medical reports makes establishing a specific etiology difficult.

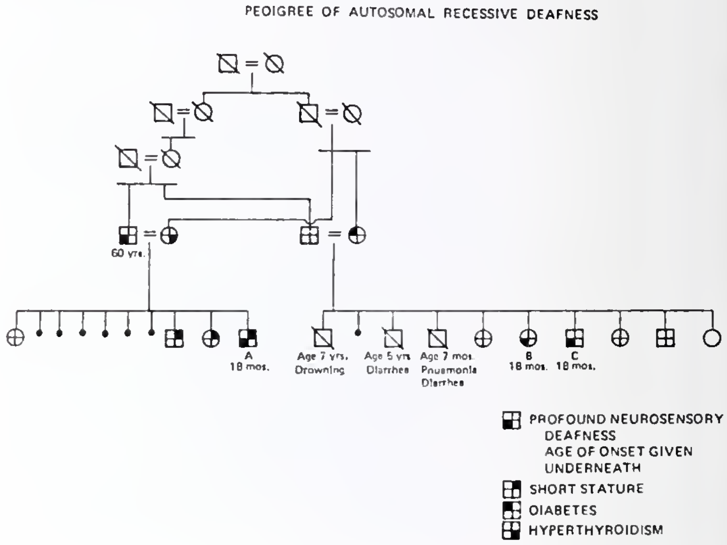
Summary

The appearance of familial early profound deafness in a related Athabascan kindred emphasizes the biological effect that inbreeding can have on small closely related village populations. Knowledge about the inheritance of human genetic disorders is helpful to the practice of general medicine (7) and enables physicians to provide necessary genetic counseling or referral (8). Present day employment and attendance at schools outside the village will bring contact with a wider unrelated selection of mates, and tend to break down the traditional pattern of related marriages in isolated village populations.

Figure 1: Pedigree of autosomal recessive deafness

The pedigree is contructed by starting with the parent generation. Below the parent generation the children are presented the eldest to the youngest from left to right. Males are signified by a square, and females by a circle. The parents, grand-parents and great-grandparents of the parental generation are presented in ascending order. Only the individuals who are connected within the pedigree are presented. Individuals not living at the time of construction are presented with a crossed bar. Stillbirths or abortions are presented by a solid dot.

Beginning on the left, the first parental couple has a reproductive history of the eldest child being a normal female followed by six stillbirths and three children of short stature. The last child has profound deafness. The reproductive history of the second parental couple illustrates the high infant mortality characteristic of village populations. In this family, one female and one male have early profound deafness. All other sibs are normal. Little can be said concerning the deceased infants, and are not included in calculation of the pedigree. The short stature in the first family is apparently a dominant characteristic, and was not demonstrated in any of the other families.



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INDICATIONS: *Therapeutically* (as an adjunct to systemic therapy when indicated), for topical infections, primary or secondary, due to susceptible organisms, as in: • infected burns, skin grafts, surgical incisions, otitis externa • primary pyodermas (impetigo, ecthyma, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection. *Prophylactically*, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing.

CONTRAINDICATIONS: Not for use in the eyes or in the external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

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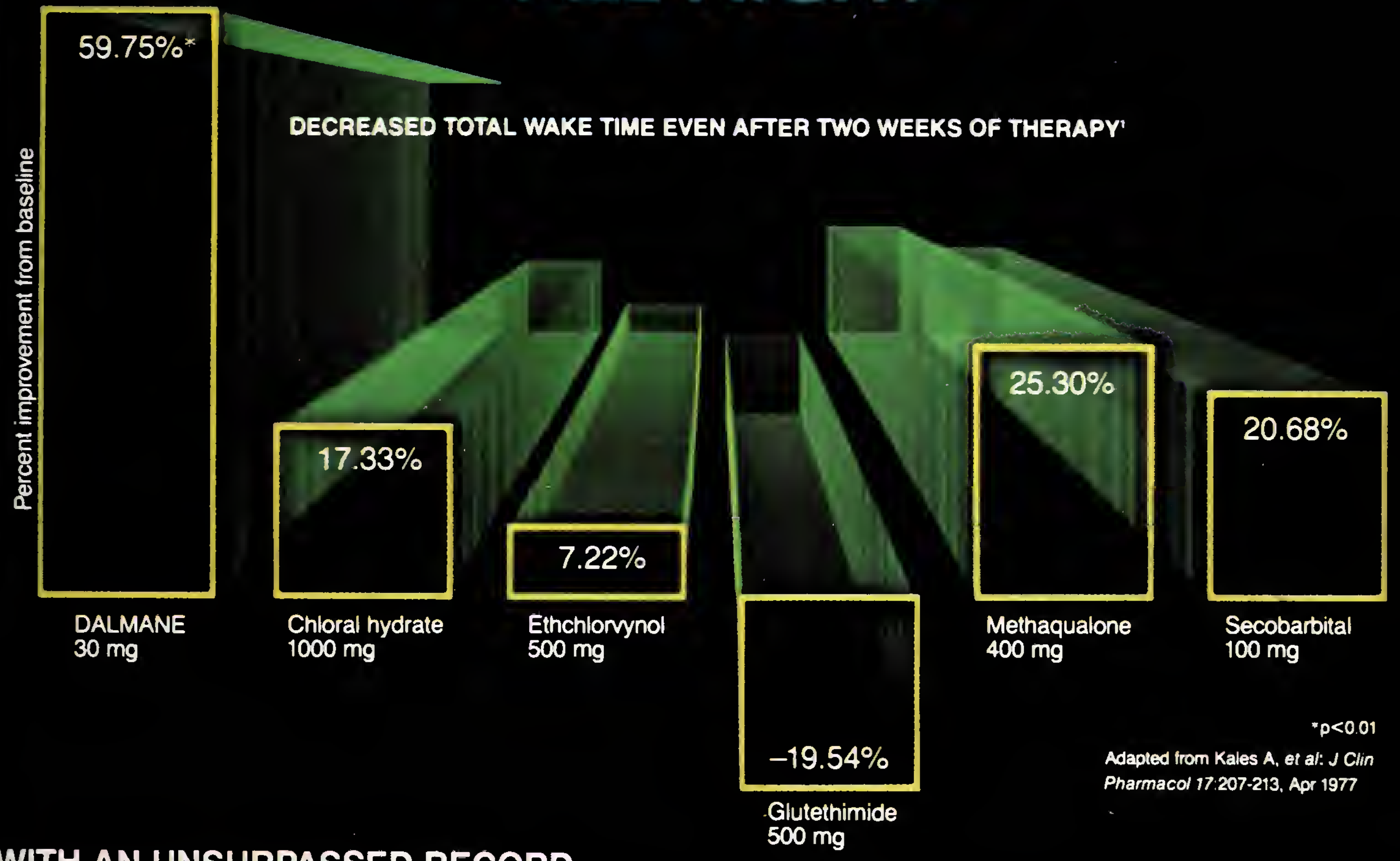

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–which can require careful monitoring in cardiovascular patients[10]

–which have strong anticholinergic effects[10]

Antihistamines

–which are *not* reliable sleep-inducing agents[11]

–which may produce stimulation instead[11]

–which have anticholinergic effects[11]

Major tranquilizers

–whose side effects may be troublesome for nonpsychotic patients[12]

–where tolerance for sedation appears rapidly[12]

Dalmane does not cause significant worsening of sleep beyond baseline levels upon discontinuation.[4]

References: 1. Kales A, *et al*: *J Clin Pharmacol 17*:207-213, Apr 1977 **2.** Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ **3.** Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther 21*:355-361, Mar 1977 **4.** Kales A, *et al*: *Clin Pharmacol Ther 18*:356-363, Sep 1975 **5.** Moore JD, Weissman L: *J Clin Pharmacol 16*:241-244, May-Jun 1976 **6.** Spiegel HE: Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ **7.** Robinson DS, Amidon EL: Interaction of benzodiazepines with warfarin in man, in *The Benzodiazepines*, edited by Garattini S, Mussini E, Randall LO. New York, Raven Press, 1973, pp 641-646 **8.** Warfarin Study: Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ **9.** Baldessarini RJ: Drugs and the treatment of psychiatric disorders, chap 19, in Goodman and Gilman's *The Pharmacological Basis of Therapeutics*, ed 6. New York, Macmillan Publishing Co. Inc., 1980, pp. 391-447 **10.** Cole JO, Davis JM: Antidepressant drugs, chap 31.2, in *Comprehensive Textbook of Psychiatry II*, edited by Freedman AM, Kaplan HI, Sadock BJ, ed 2. Baltimore. The Williams & Wilkins Company, vol 2, 1976, pp 1941-1956 **11.** Douglas WW: Histamine and 5-hydroxytryptamine (serotonin) and their antagonists, chap 26, in Goodman and Gilman's *The Pharmacological Basis of Therapeutics*, ed 6. New York, Macmillan Publishing Co. Inc., 1980, pp. 609-646 **12.** Davis JM, Cole JO: Antipsychotic drugs, chap 31.1, in *Comprehensive Textbook of Psychiatry/II*, edited by Freedman AM, Kaplan HI, Sadock BJ, ed 2. Baltimore. The Williams & Wilkins Company, vol 2, 1976, pp. 1921-1940

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; in acute or chronic medical situations requiring restful sleep. Objective sleep laboratory data have shown effectiveness for at least 28 consecutive nights of administration. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended. Repeated therapy should only be undertaken with appropriate patient evaluation.

Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect.
Adults: 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients*: 15 mg recommended initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.

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CHOOSE THE ONE MOST APPROPRIATE ANSWER (1-4).

1. A 40 year old white male is seen in the office after passing his only calcium oxalate stone. His history and physical examination is normal. He was taking no medications; SMA-12, serum electrolytes were normal, and his KUB was unremarkable. He despises milk.

   The most appropriate diagnostic and therapeutic program would be:
   a) 24 hour urine for metabolic stone survey and an IVP.
   b) Encourage a 3 liter fluid intake and encourage middle of the night void.
   c) Begin a thiazide diuretic.
   d) Begin a thiazide diuretic and Allopurinol.
   e) Reassure the patient and ask him to return if he he has another renal stone.

2. An acutely oliguric patient who has not received a diuretic is found to have a fractional excretion of sodium greater than 3 and a spot urinary sodium of 19.

   This finding is most consistent with:
   a) Acute tubular necrosis.
   b) Pre-renal azotemia.
   c) Acute glomerulonephritis.
   d) Acute ureteral obstruction.

3. A 62 year old male smoker with known oat cell carcinoma admitted via the Emergency Room stuporous has been vomiting and is known to take Lasix intermittently for edema. On admission he is found to have a supine blood pressure of 100/60 and a pulse of 100; while sitting, a blood pressure of 80/20 with a pulse of 120. Admission laboratories show a hemoglobin of 13 grams, blood sugar of 132; sodium, 114; potassium, 4.5; chloride, 80; CO_2, 25. His serum osmolality is 242 with a urine osmolality of 400. His urinary sodium is 12 and ADH level is 14 (normal 0-2).

   Leading diagnosis is:
   a) Addison's disease secondary to adrenal metastases.
   b) Syndrome of inappropriate ADH secretion from his oat cell tumor.
   c) Salt-wasting from Lasix.
   d) Hypotonic dehydration.

4. A 27 year old male automobile accident victim is admitted in shock. Following transfusions with whole blood his blood pressure is restored but he remains anuric. An electrocardiogram taken in the Emergency Room shows absent P-waves and wide QRS's consistent with hyperkalemia. His serum potassium returns 8.2 and his pH 7.37.

   The next therapeutic maneuver would be:
   a) Administer one amp of D50 followed by regular insulin IV.
   b) Administer bicarbonate IV push.
   c) Administer Kayexalate and Sorbitol by mouth.
   d) Administer IV calcium.
   e) Administer Kayexalate and Sorbitol by rectum.
   f) Arrange immediate dialysis.

CHOOSE THE MOST APPROPRIATE ANSWERS (5-6)

5. Which of the following medications should be avoided or need dose reductions in the face of renal insufficiency:
   a) Tobramycin
   b) Nafcillin
   c) Cimetidine
   d) Thiazides
   e) Furosemide
   f) Tetracycline
   g) Doxycycline
   h) Warfarin
   i) Digoxin
   j) Lidocaine
   k) Maalox
   l) Antidepressants

6. Acoustical "shadowing" seen on gallbladder ultrasonography is seen with:
   a) Calcified gallstones
   b) Noncalcified gallstones
   c) Hepatic metastasis
   d) Adenomyomatosis
   e) All of the above
   f) None of the above

TRUE OR FALSE

7. You are asked to see a 40 year old previously healthy man following a cholecystectomy who was found to have a rising BUN and creatinine postoperatively. On review of his chart, you find his urine output has remained in the one to two liter per day range. This excludes acute tubular necrosis as a likely diagnosis.

8. Failure to visualize the gallbladder on fasting ultrasonography is of little diagnostic significance.

9. The hypertensive urogram is not a satisfactory screening test for differentiating hypertension due to renal artery stenosis.

10. A skull series is mandatory in all head injuries in children in which there is loss of consciousness.

CHOOSE THE APPROPRIATE COMBINATIONS

1 if A & C are true
2 if A, B & C are true
3 if B & D are true
4 if all are true

11. The sudden severe lancinating pain of the rectum lasting seconds to minutes termed proctalgia fugax occurs in:
    A. Individuals suffering from irritable bowel syndrome.
    B. Only young male physicians.
    C. Many individuals and although incurable is harmless, tending to become less frequent with age.
    D. Both males and females and responds to amylnitrate therapy.

12. Fecalomas are inspissated masses of stool that are found most often associated with:
    A. Elderly, debiliated chronically constipated bedridden individuals.
    B. Ingestion of anticholinergic medication.
    C. Abuse of narcotics.
    D. Stercoral ulcerations.

X-RAY OF THE MONTH

HISTORY: A 60 year old male presented with a one month history of cramping midabdominal pain. The stool was guaiac positive. History and physical exam was otherwise unremarkable. Figure 1 was the KUB; Figure 2, the UGI and small bowel follow-through.

What is your diagnosis?

Figure 1.

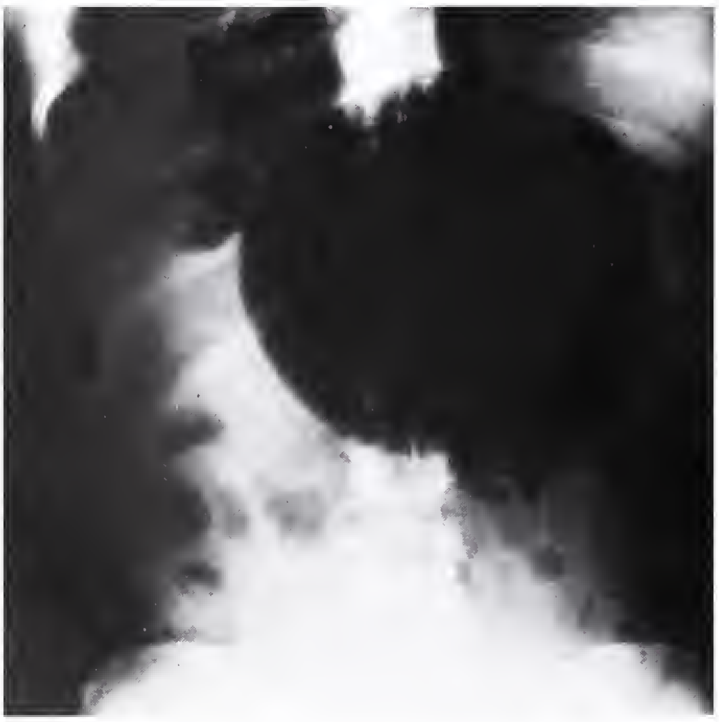

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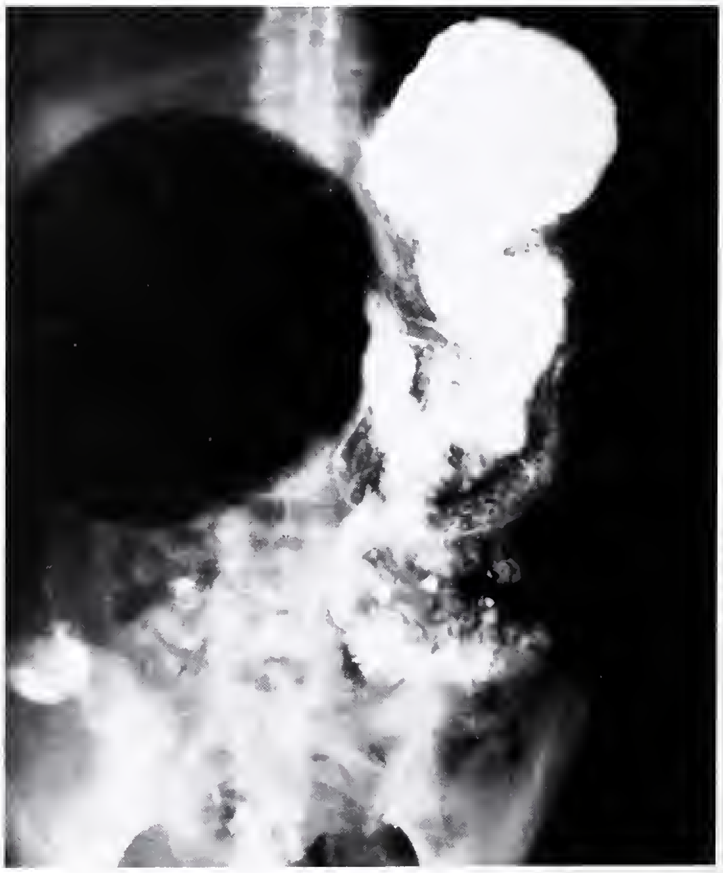
Figure 2.

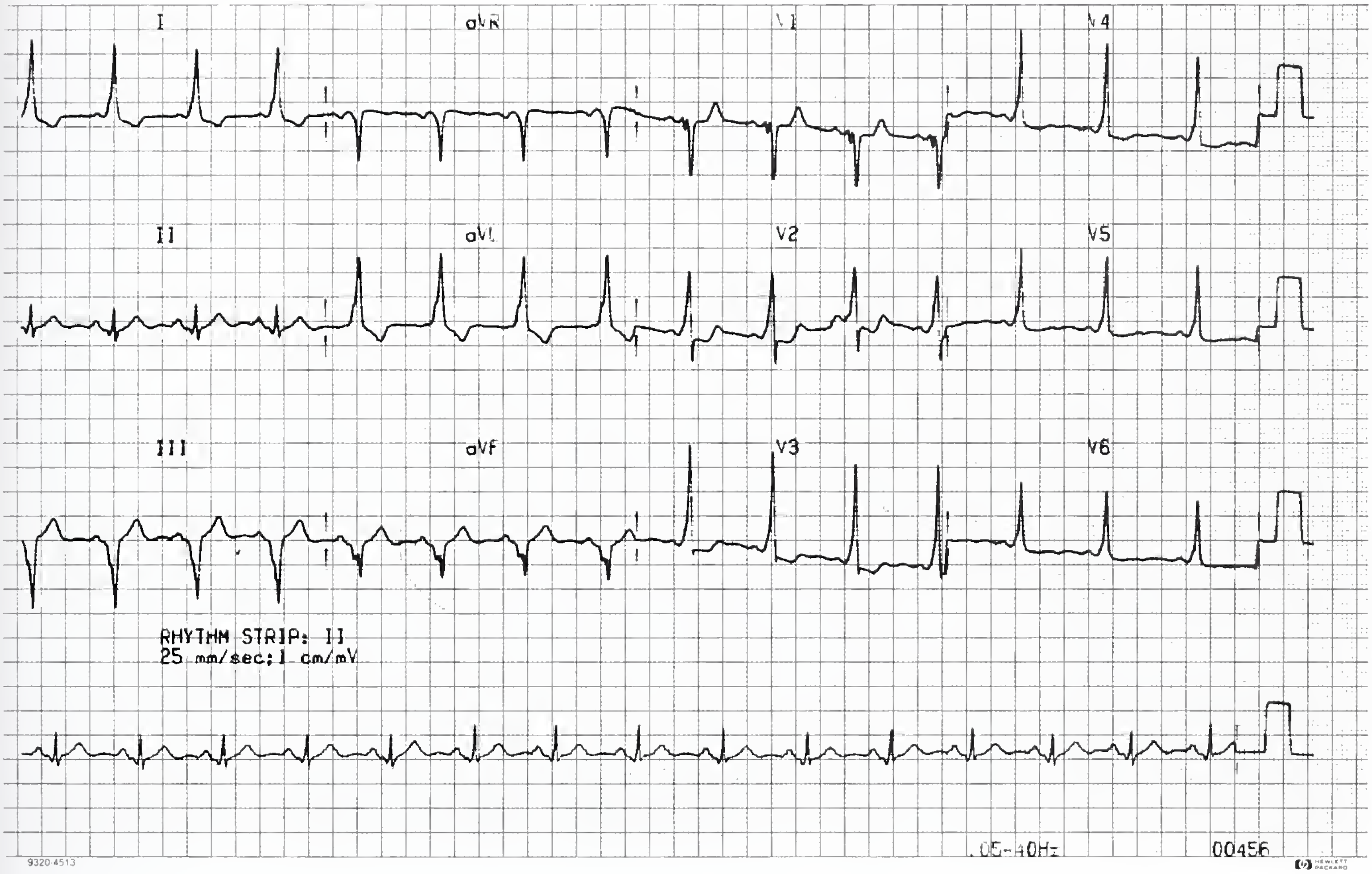


ELECTROCARDIOGRAM OF THE MONTH

This is the electrocardiogram of a 51 year old male who has no symptoms of any illness. The electrocardiogram was obtained at the time of a pre-employment physical exam. The physical examination revealed mild hypertension.

Questions: Do you think that the electrocardiogram demonstrates any condition that would lessen his chance of being a satisfactory maintenance supervisor for the school district?

What is the condition demonstrated by the electrocardiogram?



Health and Safety Tip
From the American Medical Association

535 North Dearborn Street/Chicago, Illinois 60610

Lower Doctor Bills Possible, Says AMA

Cut Your Doctor Bills

Like all other living expenses, the price of medical care continues to rise. But there are still a number of ways families can stretch their health care dollars. The American Medical Association offers these tips.

Have a family doctor. He will keep a permanent record of your medical history which may save duplicating many expensive and time-consuming tests.

Don't wait too long. Many people try to save money on medical bills by not seeing the doctor until they are seriously ill. This not only defeats the purpose of preventive medicine, but it is more expensive in the long run.

Have regular checkups. If you are past 35, a complete health evaluation every one to three years is a good idea. Early detection obviously offers a better chance to control and cure disease.

Go to the doctor's office. House calls are more expensive and less efficient than office visits.

Use the telephone. A family doctor who has examined you regularly is familiar with your health history. He can sometimes advise you over the telephone about minor health problems.

Follow your doctor's orders. If you refuse to follow the expert advice you solicit and pay for, you are throwing your money away.

Buy health insurance. Today, more than 183 million Americans are protected by some form of private health insurance. It is a bargain considering the shattering effects that prolonged illness can have on family finances.

Check your eligibility for Medicare. For persons over age 65, the Medicare program provides protection against the cost of illness.

If you are approaching age 65, check with your local Social Security Administration office for assistance in enrolling in this program.

January, 1981
Science News Service
AMA

Convention News:

The annual meeting of the Alaska State Medical Auxiliary will be in Fairbanks, June 5-8. Convention center will be the Captain Bartlett. Auxiliary members in both Fairbanks and Anchorage are busy working on meeting times and a program. We hope to have an interesting program to be enjoyed by the entire family this year. The completed plans will be announced by newsletter at a latter date. Do plan to put Fairbanks into your travel plans and join us for the convention. We look forward to seeing all of you.

Anchorage News:

The Anchorage Medical Society Auxiliary is sponsoring the second annual SHAPE UP FOR LIFE RUN of 10 kilometers on Saturday, May 1. Held in conjunction with the WALK FOR HOPE, "SHAPE UP" is open to everyone; old, young, joggers, and walkers. Profits above costs will be donated to Hope Cottage for the Handicapped and AMA-ERF.

Last year's race saw more than 600 entrants in the run from Alaska Hospital to Providence Hospital. There are many accomplished racers among our local physicians. Dr. Jan Nyboer (Opthamology) at 37.23 barely edged ahead of Dr. George Stransky (OB/GYN) at 37.58. Medical husband-wife teams did extremely well with the Hoods, Lehmans, and Brownsbergers both finishing in the top ten of their respective age groups. Children seemed to be faster than their folks as Sabrina Beal, George Gates, Jr., Joy Blankenship and Jennifer Sonneborn proved. Dr. Charles Sternhagen (Radiology) had the largest cheering section as his family motored along route sections to encourage his efforts.

We hope that all last year's feet will again enter and that those who do not compete will help with the essential jobs of course safety, timing, finish line and race results. Volunteers please contact Sue Mues, 1982's chairperson. Registration forms are available at the Alaska and Providence Hospitals and at the Athlete's Foot stores in Anchorage or via mail. Address inquiries to 3637 W. 100th Ave., Anchorage, Alaska 99502. Please enclose the $6.00 fee and include your name, age, sex and whether or not you are a local Medical Society member. Come spend an invigorating morning at the SHAPE UP FOR LIFE run.

The Auxiliary also has a second worthwhile project. Members will gather at the Alaska State Medical Association office on Laurel Street in early June to carry out a beautification project, planting flowers and making the office exterior more appealing.

Family News:

Anchorage is very proud of its Youth Symphony. Among its members are several children of Alaska State Medical Association members. The children come from the families of Doctors Tschop, Ivy, Rhyneer, Wood and Sutherland. Chaperones for the group include Mrs. Tom Wood, Mrs. Richard Sutherland and Dr. George Rhyneer.

Alaska State Medical Auxiliary President
Marge Muzzall

Psychiatrist wanted for Bassett Army Hospital, Fort Wainwright, Alaska. Bassett Army Hospital is a fully equipped, 80 bed hospital supporting a military population of 6,500. Fort Wainwright is located adjacent to Fairbanks, Alaska. Excellent opportunity for a fully trained psychiatrist. Guaranteed income, bonuses and an excellent benefits package. Contact: Captain Pat Shipley, Bldg, 138, Room 116, Naval Support Activity (Sand Point), Seattle, Washington 98115 or call (206) 527-3548.

For Sale:

At Silver Salmon Creek, furnished house on 5 acres, shop, generator, fuel, etc. Ready to move into $130,000 cash; $150,000 terms. Paul Isaak, M.D.; Box 569; Soldotna, Alaska 99669. Phone: office - (907) 262-9341, home - 262-4547.

A letter to the Editor

Dear Editor:

What the hell's going on up there???

Since Volume I, No. 1, **Alaska Medicine** has remained one of my primary means of staying aware of the Alaska medical scene. Either you have found Utopia - or 1984 is truly upon you!

Doesn't anyone there get angry any more? Evidently the medical community is quite happy with Medicare, Medicaid, MICA, Division of Public Health, the Native Health Service, and the BIA. No longer are the boondocks infested with phthisis, smelly ears, missionaries, nits, D.T.'s, caries, politicians and frostbite - and everything is just jolly in Juneau! It seems that only benign issues must be presented to the ASMA - and for unanimous votes, with fully concurring component groups. Has the Auxiliary disbanded?

I miss especially the letters, editorials, and the gossip columns. Who is doing what to whom - or with whom? Who got boarded, joined or changed groups, gave a paper, received an honor, or got disciplined? No malpractice or arbitration panel discussions? No grievances? No new members?

Is no one ticked off enough to write? I see nothing the likes of an informative, witty, and challenging Milo Fritz. Are there no more provocative Menckenesque Winthrop Fish's, Whaley's of wisdom, or other assorted rascals, mavericks, and Turks (of any age)?

Earlier volumes of **Alaska Medicine** were literate, informative, had items of interest about Alaska's special problems, were humorous, profound, intelligent, and really a delight. Physicians were proud to have an original paper published in their state journal. At present, the best way to get something original and unique is to die - and then have an old friend write your obit.

Thus, medicine in Alaska must be as serene as the consistently excellent cover art - at least from following **Alaska Medicine**.

RIP,
John B. Fenger, M.D.

P.S. Condolences to founding editor Mills.

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POST GRADUATE COURSES

		Category I Hours
March 19-21	**Alyeska Lung Conferences** - Chena Hot Springs Conference Chairman Ann Morris, M.D. Conference Coordinator, Leo Kaye - 272-2332	15
March 25-27	**Neonatal Symposium** - Providence Hospital Guest Speaker - T. Allen Merritt, M.D., F.A.A.P. University of California Symposium Manager - July Kyle - 276-4511 ext. 1111	16
April 22-24	**Basic Science for Clinicians** - Providence Hospital Faculty - Edward Rubenstein, M.D. Associate Dean of Post Graduate Med. Education Stanford University Medical Center Eric M. Shooter, Ph.D. Division of Neurobiology Stanford University Medical Center Topics: Evolutionary Selection of Elements for Life Quantum Chemistry and Biochemistry DNA, Genes and Chromosomes Nerve Growth Factor and Regeneration For information: 276-4511 - Medical Staff Office	16
June 5-9	**ASMA Annual Convention** - Chena Hot Springs and Fairbanks For Information: 277-6891	
August 5-6	**WAMI Sponsored OB/GYN Summer Update** Providence Hospital For Information: 276-4511	
October 1982	**Cardiology Conference** Providence Hospital	
November 1982	**Pediatric Symposium** Providence Hospital	

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1982 ASMA ANNUAL MEETING

June 5-9, 1982
Captain Bartlett Inn & Chena Hot Springs Resort

TENTATIVE AGENDA

Bartlett Inn

Saturday, June 5, 1982	12:00 - 5:00	Arrival & Registration	- Lobby Bartlett
	1:00	Exhibit Booth Set-up	- "B" Section
	1:30 - 4:00	Council Meeting	- Trophy Room
	5:00 - 7:30	Salmon/Halibut/BBQ	- Alaskaland
	7:30 - 9:00	Scientific Session	- Fireplace Mtg. Room
Sunday, June 6, 1982	7:30 - 12:00	Registration	- Lobby
	8:00 - 10:00	ASMA Business Session	- Fireplace Mtg. Room
	10:30 - 12:00	Scientific Session	- Trophy Room
	12:30 - 2:00	ALPAC Annual Lunch Mtg.	- Trophy Room
	2:00 - 5:00	Scientific Session	- Fireplace Mtg. Room
	5:30 - 9:30	Dinner Cruise	- Riverboat Discovery
Monday, June 7, 1982	8:00 - 11:30	Scientific Session	- Fireplace Mtg. Room
	11:30 - 1:30	Family Picnic	- Alaskaland
	2:00 - 4:00	ASMA Business Session	- Trophy Room
	1:30 - 5:00	Bus tour (spouses & kids) (departure bus from Alaskaland)	- Museum, pipeline, Experimental Farm Rose garden
	4:00 - 5:00	Scientific Session	- Fireplace Mtg. Room
	6:00 - 10:00	Specialty Annual Dinner Meetings	
		AAFP	- Trophy Room
		College of Surgeons	- Lounge
		Academy of Pediatrics	- Gold Room
Tuesday, June 8, 1982	8:00 - 9:00	ASMA Business Session	- Trophy Room
	9:00 - 12:00	Scientific Session	- Fireplace Mtg. Room
	12:00	Checkout	
	12:30	Bus to Airport or Chena Hot Springs Resort	
	2:00 - 5:00	Open Recreation	
	5:00 - 6:00	Final ASMA Business Session	- Chena Resort
	5:00	BBQ for kids	- Chena Resort
	6:00 - 7:00	Cocktails	
	7:00 - 9:30	Presidents Banquet	- Chena Resort
		Award Presentations	
	9:30	Transportation back to Bartlett for those not staying at Chena overnight.	
Wednesday, June 9, 1982	9:00 - 10:30	Council Meeting	- Chena Resort
	12:00	Transportation to Fairbanks Airport from Chena	

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William H. Bowers, M.D.
ALASKA STATE MEDICAL ASSOCIATION
4107 Laurel Street #1
Anchorage, Alaska 99504

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__ Arrange manuscript as follows: (1) Title page including title, author(s), and location by city and state, institution at which work was done, address to which reprint requests should be sent. Authors will be sent three complimentary copies of the Journal in which their work appears. (2) Abstract of less than 150 words using no abbreviations, footnotes and references. (3) Text including introduction, methods, results and discussion. (4) Acknowledgements. (5) References, tables, figure legends and figures.

__ References are cited in the text by numerals enclosed in parentheses. The reference section is typed double-spaced on sheets separate from the text and is numbered consecutively in the order in which references are cited in the text. Included are last names and initials of all authors, title of article, name of publication, volume, inclusive pages and year published. Abbreviations will conform to those used in **Index Medicus**.

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ANSWERS TO PHYSICIAN SELF ASSESSMENT

1. *E.* Rose: Pathophysiology of Renal Disease. 1981, page 675.
2. *A.* Miller, et al: Urinary Diagnostic Indices in Acute Renal Failure. Ann Int Med 89:47-50, 1976.
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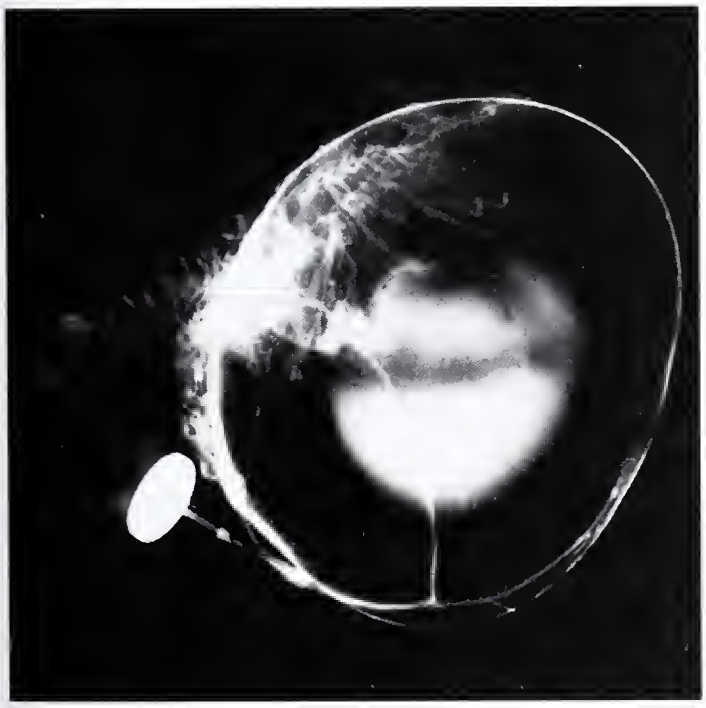
Figure 3



X-RAY OF THE MONTH

Figure 3 is the resected specium.
Differential diagnosis includes:

1. Emphysematous cystitis.
2. Emphysematous cholecystitis.
3. Pneumatosis intestinalis.
4. Duplication cyst.

DIAGNOSIS: Giant diverticulum of the colon.

This is a rare complication of diverticulitis. Giant diverticulae, when they occur, usually are seen in the sigmoid colon. Typically they are a very smooth appearing cystic lesion. Rarely air-fluid levels are seen within the cyst. This may occur either from blood mixed with stool or from pus within the cyst. Occasionally these cysts become infected. The cysts often will fill with barium during a barium enema examination.

On pathologic examination, the cysts generally have a relatively thick wall, ranging from 0.5 cm to 1 cm. There usually is an identifiable communication with the colon, although often it is so small that it is very difficult to find. Histologically, the wall usually is comprised of fibrous and granulation tissue. Occasionally residual portions of serosa and mucosa may be detected but muscle tissue generally is not seen. This supports the contention that the giant cyst is the end result of an acquired pseudodiverticulum that has undergone superimposed infection, abscess formation and healing. Clinical symptoms often are relatively few, suggesting that this is a low grade slowly developing process.

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ELECTROCARDIOGRAM OF THE MONTH

The ECG demonstrates ventricular pre-excitation. Note the short PR interval in lead I, the upsloping onset of the QRS in lead I and the widened QRS complex. If the ECG is read carelessly a mistaken diagnosis of inferior wall infarction can be made.

Pre-excitation as an isolated electrocardiographic finding does not pre-suppose cardiac malfunction or disability. A number of individuals with pre-excitation have that as their only unusual cardiovascular finding. If the pre-excitation is associated with paroxysmal supraventricular tachycardia, the complex of signs and symptoms is called Wolf-Parkinson-White Syndrome. The tachycardias of W-P-W Syndrome often are controlled with anti-arrhythmic drugs but sometimes can be very troublesome and occasionally are fatal.

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1. Rubin RH, Swartz MN: *N Engl J Med 303* 426-432, Aug 21, 1980. **2.** Data on file, Medical Department, Hoffmann-La Roche Inc.

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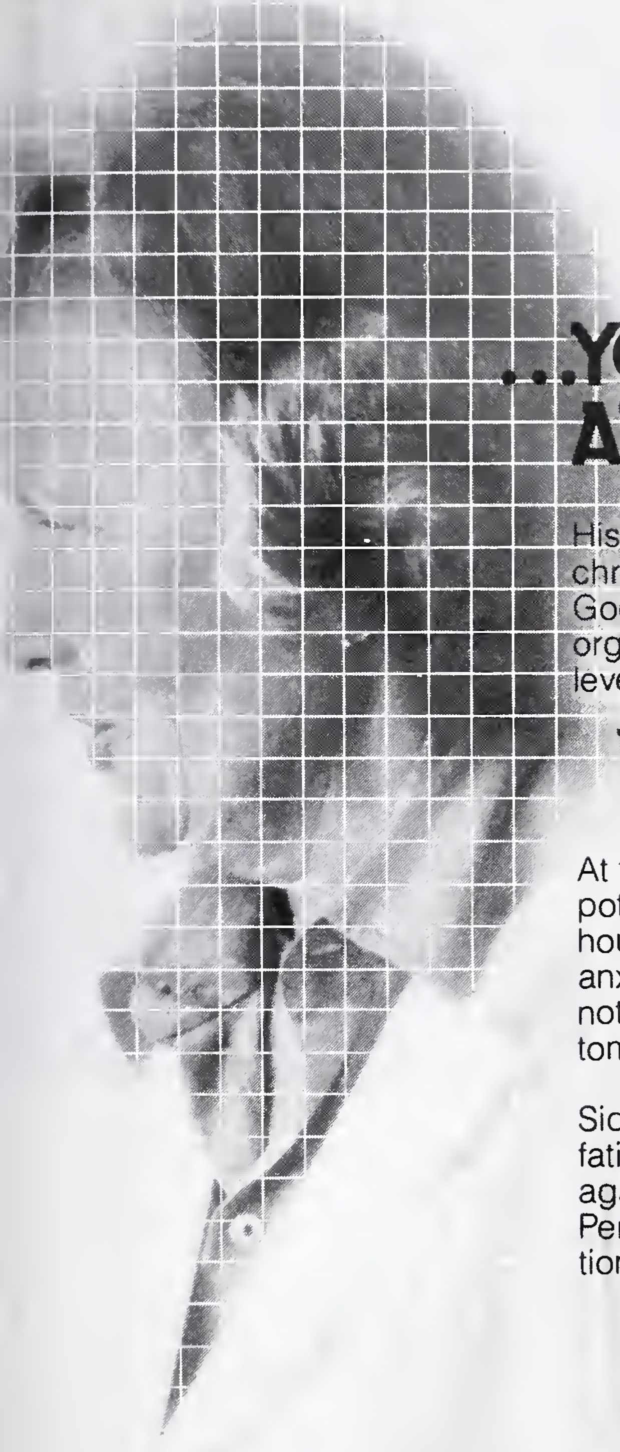

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The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.
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Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

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Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.
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Dosage: Individualize for maximum beneficial effect. *Adults:* Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).
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ALASKA MEDICINE

Official Journal of the Alaska State Medical Association

4107 Laurel, Anchorage, Alaska 99504

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ALASKA MEDICINE is the bi-monthly journal of the Alaska State Medical Association; Alaska Medicine, 4107 Laurel, Anchorage, Alaska 99504. *ALASKA MEDICINE* is printed by Northern Printing Co., Inc., 655 Warehouse Avenue, Anchorage, Alaska 99501.
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About the cover: *Ewe and lamb* by Mark Newman, M.D.

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BEAR MAULINGS IN ALASKA

Steven C. Rose, M.D.

Abstract

*Maulings inflicted by bears are potenially catastrophic events. Most frequently they occur during the latter summer and autumn, often near bodies of water and along trails or roads. Usually the victims are male hunters. Although different species of bear may be involved, the brown bear (**Ursus arctos**) is most frequently associated with fatal maulings.*

Typically the wounds are puncture type, tetrad configurated. Large lacerations, scalp flap wounds, tissue avulsions, and multiple small abrasions and contusions over the head, neck, dorsal torso, proximal extremities and hands are common. Although skeletal fractures are common; thoracic and abdominal cavities, facial structures and neurovascular bundles are usually spared.

Management of the mauling victim is essentially that involved in the care of any other major trauma and/or animal bite victim. Rabies prophyllaxis is generally not indicated. More data is needed regarding the bacteriology of bear wounds.

Bear encounters are an ever present reality in Alaska since bears and humans frequent similar areas. Thus clinicians will be faced with the management of mauled victims. Careful search reveals a paucity of literature on the subject (1). This article is based on data from Alaska's Department of Public Safety and review of available information on cases during recent years in Southeast Alaska.

Materials and Methods

Initially the reviewer had hoped to review charts in all of the state community hospitals. It became evident that the ICDA did not group these patients within workable diagnostic categories. As an alternative, medical practitioners and medical records personnel were queried in various communities of Southeast Alaska where events were easily recalled. A total of ten cases from community hospitals were compiled spanning 1960-1981. Although the number is small, certain trends seem to emerge and warrant future investigation.

A second source of data was the Alaska Department of Public Safety, Fish and Wildlife Protection, which compiled a record of 124 known maulings from 1895-1977. It includes name, location, date, species of bear, and any known information relating to cause of attack. The list limited to brown or black bear maulings was reviewed.

Case Presentations

Case #1 - A 22 year old male who was deer hunting surprised a brown bear that was feeding on blueberries. During the attack the bear was shot and killed. The patient presented with multiple abrasions and puncture wounds of the left hand associated with fractures of the first and second metatarsals. Wound culture subsequently revealed a scant growth of *Staphyloccoccus epidermidis.*

Case #2 - A 56 year old male was deer hunting when surprised by a brown bear that mauled him. Due to inclement weather, he was unable to seek medical attention for seven days. He presented with a low grade fever, mutliple scalp lacerations, and clustered puncture wounds in groups of four over the back, buttocks and right thigh. His multiple wound cultures demonstrated a mixed growth of *Proteus vulgaris* and *Citrobacter diversus*, a moderate growth of *Escherichia coli* and a scant growth of *Staphylococcus epidermidis.*

Case #3 - Another deer hunter, a 43 year old male, was mauled by a brown bear. He had sustained a cluster of four puncture wounds to the right thigh, and multiple deep lacerations to the left knee which appeared to communicate with the joint space. Operative exploration demonstrated a torn avulsed medial collateral ligament as well as chondral fracture of the medial femoral condyle. Wound cultures taken after the initiation of antibiotics were negative.

Case #4 - A 25 year old male deer hunter happened upon, shot at, and was subsequently mauled by a brown bear. The patient had sought refuge under a log placing his right arm over his head until his partner could frighten away the bear. He received multiple deep lacerations and ulnar nerve palsy resulted. Wound exploration demonstrated neurovascular sparing and ulnar nerve function subsequently returned.

Case #5 - Shortly after killing deer, a 43 year old male was attacked and severely mauled by a large brown bear. After being evacuated to the nearest hospital, he was found to be unresponsive and hypotensive. His massive wounds included multiple scalp lacerations, comminuted depressed fractures involving the entire posterior skull through which brain extruded, massive lacerations of the left shoulder girdle and large tissue defects of left flank and abdominal wall, lacerations, puncture wounds, and abrasions of his arms, back and left leg. In spite of intensive supportive therapy he became febrile and had a two day downhill course marked by multiple generalized seizures terminating in status epilepticus and cardiac arrest.

Case #6 - A 51 year old male was mauled by a brown bear under unknown circumstances. The sketchy records only refer to a large contussion and multiple abrasions of the right thigh.

Case #7 - A 36 year old logger was eating his lunch on the side of a foot trail when he was attacked by a brown bear. He presented with multiple large contaminated lacerations of the right thigh, right forearm and left elbow. Later operative exploration demonstrated a pentrating fracture of the radial head with a torn annular ligament.

Case #8 - A 21 year old male was performing a stream survey when he saw a brown bear rapidly approaching through the underbrush. In the process of fleeing, he was overtaken and mauled. He had sustained multiple grossly contaminated lacerations of varying severity involving the scalp, ear, axillae, back, lateral chest, abdominal wall, legs and a chip fracture of the lateral femoral condyle. His course was complicated by a wound cellulitis with cultures growing *Staphylococcus aureus*.

BEAR MAULINGS
SUMMARY OF CASE PRESENTATIONS

Case	1	2	3	4	5	6	7	8	9	10
Sex	M	M	M	M	M	M	M	M	M	M
Age	22	56	43	25	43	51	36	21	27	39
Hunter	+	+	+	+	+	?				+
Wounded Bear	+		?	+	+	?				+
Species	Brn	Brn	Brn	Brn	Brn	Brn	Brn	Brn	Blk	Brn
Fatality					+				+	
Area Injured										
Face					+				*	+
Scalp		+			+			+	*	+
Back		+			+			+	*	
Chest								+	*	
Abdomen					+			+	*	
Shoulders					+			+	*	
Arms				+	+		+		*	+
Hands	+				+			+	*	
Buttocks/Pelvis		+			+				*	+
Legs		+	+		+		+	+	*	
Feet									*	
Deep Structures										
Skull/CNS					+				*	
Fractures	+		+		+		+	+	*	
Thoracic Cavity									*	
Abdominal Cavity					**				*	
Neurovascular Bundles				+					*	
Wound Type										
Clustered Punctures		+	+		+			+	*	+
Deep Lacerations	+	+			+		+	+	*	+
Flap Lacerations		+			+				*	
Extensive Abrasions. Minor Lacerations, Contusions		+		+	+	+			*	
Febrile		+	+		+			+	*	
Cultures	S.ep	S.ep P.vu C.vi E.co						S.au	*	

*Not applicable, victim ingested
**Microscopic hematuria noted

Case #9 - Within Glacier Bay National Monument, the beach camp of a 27 year old male kayaker was noted to be disheveled and vacant. On subsequent investigation, human skeletal remains were discovered. An intruding black bear was slain; later necropsy demonstrated a well nourished mature sow with human hair, bone fragments, cloth fabric, and human food included in its gastrintestinal tract.

Case #10 - A 39 year old male hunter was participating in a deer drive when he was attacked by an apparently cornered brown bear. Although the bear was shot twice, it mauled the victim prior to fleeing. The patient received a large left facial laceration and clustered puncture wounds of the left arm and groin.

Results

Analyzing the data supplied by the Department of Public Safety and the more detailed information available in review of Southeast Alaskan charts yielded several trends.

ENVIRONMENTAL FACTORS

Seasonal variation

The distribution of bear maulings by month (see table) indicates a cluster of events. The autumnal distribution in Southeastern Alaska correlates well with deer hunting season.

The curve reflecting total Alaskan experience is more complex, displaying a wider variety of climatic and geographic locations, heterogeneous bear populations, and a variety of outdoor activities. The vast majority occur during late summer and autumn months, similar to the Southeastern distribution. The time period correlates fairly well with migratory salmon runs which attract feeding bears into riverbed areas frequented by humans. The overall curve is bimodal, with an initial peak in late spring and a relative sparing during June. The dearth of winter cases doubtlessly reflects the period of hibernation.

There is not enough information on hand to assess other environmental variables thoroughly. Many of the Southeastern maulings seem to have occurred between noon and 4 p.m.; the numbers are small, and very limited geographically and seasonally. It probably reflects time hunters appear in the bears' domain.

Similarly, references to locale and terrain are too vague to be of much use. The Department of Public Safety (ADPS) lists 65 of the 124 cases as having occurred in the proximity of a river, creek or other body of water. The same list specified a road or trail in thirteen cases where human concentration is within the bears' domain. Another thirteen were listed as having occurred in or near a town, village or cannery. Unfortunately there were no more specifics regarding areas. None of the cases listed occurred at a dump site. An additional eleven cases have occurred in two areas where bears have been protected from firearms: McKinley National Park (now Denali National Park) and

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Glacier Bay National Monument (now Glacier Bay National Park).

SEASONAL VARIATION		
	Total Alaska A.D.P.S. 1895-1977	Southeast Alaska Case Studies 1960-1981
January	-	-
February	-	-
March	-	-
April	5	-
May	6	-
June	1	1
July	15	1
August	14	2
September	18	2
October	9	3
November	1	1
December	1	-

Human Factors

Gender clearly is a factor in the ten case presentations. In the ADPS series, gender was either stated, or could be implied with a high degree of certainity by given names. Ninety-six involved males and 10 involved females. Doubtless the distribution is a reflection of the number of men found in areas involved. The preliminary data would not support the contention that women are at higher risk because of menses, demeanor or other factors. Age, race, occupation and length of residency information are not available. The type of activity is probably significant. In six case presentations the victims were deer hunting. Since a variety of pursuits take humans into the woods (bear hunting, beach combing, hiking, prospecting), deer hunting seems to combine several factors (prehibernation feeding, stealth, blood stained clothing, offal, etc.) which increase the risk of bear attack.

Animal Factors

In Alaska there are three species of bears, the black bear (*Ursus americanus*), the brown/grizzly bear (*Ursus actos*), and the polar bear (*Ursus maritimus*). Data in this review deal only with the first two species. In the ADPS series, the species was identified in 106 cases. Ninety involved brown/grizzly bears and 16 involved black bears. Total population counts are not available, but some authorities estimate that black bears outnumber their brown/grizzly counterparts by a ratio of 4:1 (2). The disproportionate number of maulings by brown/ grizzly bears supports a reputation for being dangerous. It is further supported by the number of deaths; 28 fatal maulings by brown/grizzly bears, compared to three by black bears.

The health of the involved bears is unknown. Wounded bears account for a significant number. Since there is no organized program to autopsy all available offending bears, the role of old wounds, disease, and nutritional status remains largely conjectural.

Situational Factors

An accepted observation of guides, naturalists, and others who have extensive experience with bears is the propensity to flee upon encountering humans; but it does not always occur (3,4). There seem to be more factors involved than close proximity of bear and human. In the ADPS series, a probably cause was listed in 73 instances. Three situations are clearly dangerous: 26 maulings involved humans who surprised the bears, 26 involved sows with their cubs, and another 15 involved bear that were thought to have been shot or wounded. Other situations felt to predispose bears to attack rather than retreat include old wounds, malnutrition, disease, defense of feeding areas, protection (park bears), domestication (dump bears, campground bears, etc.), inadequate disposal of food/refuse and hunters transporting game. The data available do not support or refute the contentions. Attempting to unravel variables involved in the precarious balance between attack and retreat might help prevent some tragic events.

Clinical Observations

Although ten cases are hardly ground for definitive statements, there do emerge trends that are worth noting. Confirmation or revision of patterns will have to wait until a larger series can be accrued.

Type of Wounds

There are deep puncture wounds grouped in fours, representing injuries inflicted by large canine teeth (photo). Next are the multiple large deep lacerations inflicted by tearing motion of teeth and/or long, sharp claws. If the force of the bite is deflected by the cranium, large avulsive flaps are often created. Extensive tissue defects occur when a bite is completed. Finally there are multiple abrasions, contusions, and scratches which occur if the victim is dragged across or thrown upon the ground.

Ursa actos skull

Deep Structures

The most commonly injured deep structure is the peripheral skeleton. In spite of the axis and proximal extremities being involved, the underlying bony structures (spine, ribs, shaft of femur and humerus) are seemingly spared by the investments of muscle. Surprisingly even in the cases involving fairly severe soft tissue trauma, the neurovascular bundles have often been spared.

In presented cases the only vital organ injured was the brain. Both the abdominal and thoracic cavities were spared, even in the initial fatal mauling.

Distribution of Wounds

Severe injuries frequently involved the scalp/skull, neck, shoulders, and proximal extremities. The face, chest, abdomen, and feet seem to be spared. The constellation would logically result from victims curling up on being assaulted or may relate to the method a bear uses to bring down quarry such as deer or other ungulates.

Severity

As evidenced by the case reports and the high fatality rate in the ADPS series, bear maulings are almost universally events of major magnitude.

Bacteriology

The risk of infection appears to be considerable, four of ten cases demonstrating infectious complications. Unfortunately wound cultures were obtained infrequently and sometimes after parenteral antibiotics had been administered. One cannot (based on available data) reach any conclusions on which to base future antibiotic therapy.

Other Aspects of Care

Wound management should employ the principles involved in caring for any trauma and/or animal bite victim (5,6). There have been no reported cases of naturally occuring rabies involving members of the bear family, probably reflecting a relative resistance of the bear central nervous system to the rabies virus (7,8). Very high titers of the virus are necessary to experimentally induce rabies in bears. Foxes are the primary reservior for rabies in Alaska and are exquisitely sensitive to the rabies virus, usually dying well before building up titers adequate to infect a bear. While rabies prophylaxis is rarely indicated, each case should be evaluated individually and the Virology-Rabies Unit contacted at the University of Alaska in Fairbanks.

Summary

Maulings occur when and where bears and humans are most likely to encounter one another. They occur in the warmer months, peaking in the late summer and early autumn. Furthermore they appear to occur most frequently near bodies of water and along trails or roads. The vast majority of maulings involve men. The brown/grizzly bear is involved in a disproportionate number of maulings, particularly fatal ones.

From the standpoint of public safety, an area that deserves more study is the set of events which transform a bear encounter into a bear mauling. Three factors seem to recur; the bear wounded, the bear being surprised at close distance, and a sow being encountered while accompanied by cub(s). Many other risk factors have been suggested by persons with experience and deserve further investigation. Before endorsing use of firearms, playing dead, taking flight, or other bear tactics, more data will need to be accummulated and analyzed.

Types of wounds in the cases reviewed included puncture wounds in tetrad configuration, large lacerations, scalp flap wounds, large tissue avulsions, and multiple small abrasions and contusions. Deep structure involvement usually affects the skeleton with penetration of the brain in one case. The thoracic and abdominal cavities, the facial structures and the neurovascular bundles are relatively spared. The soft tissue injuries most typically affect the dorsal aspect of the axis, proximal extremities, and the hands.

Information on the bacteriology of wounds is scant. Much more data needs to be recovered to make meaningful statements. Principles of management of a mauling victim are those involved in any trauma and/or animal bite victim, except that rabies prophylaxis is usually not needed.

Acknowledgements

Special thanks to the Alaska Department of Public Safety for use of their data, to Dr. Donald Ritter for his communications on rabies, to Dr. George Longenbaugh for his assistance in compiling the case studies, to Drs. Sarah Isto and Robin Blake for their constructive feedback, and finally to my wife, Susan, for her thankless job of typing.

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THE SEROLOGIC DIAGNOSIS OF HBV DISEASE

Michael Parent, M.D.

A great wealth of information about Hepatitis B Virus (HBV) hsa been accumulated over the past two decades. Recent advances in the area of molecular biology and immunology have written a significant chapter in the science of our era. The soon-to-be-released vaccine promises an optimistic future.

For the physician, the recent proliferation of HBV serologies has introduced an element of confusion in their clinical interpretation. When properly interpreted, however, the serologies can provide useful information about the state of the disease, the degree of infectivity and the immune status of the host.

Hepatitis B Virus (HBV)

The HBV is a unique double-stranded DNA virus that is quite distinct in character from the RNA Hepatitis A virus. The HBV is most closely related to the Herpes virus group and shares the commensal tendencies and oncogenic potential with the Herpes group, but retains a distinct propensity for the liver.

The complete virus is quite simple in structure, consisting of a lipoprotein capsule enveloping a core of double-stranded circular DNA. Electron microscopy identifies the HBV as an 42 nm particle; the so-called Dane Particle.

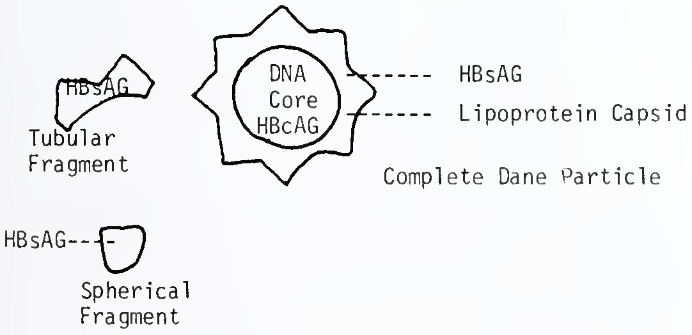

Figure 1: Conceptual Representation of Hepatitis B Virus and Hepatitis B Viral Fragments

The HBV Associated Antigens

Three antigens have now been identified for the HBV. One of the antigens is located on the surface of the virus. The two other antigens are believed to be localized to the inner core of the virus. The new generation of assays for these antigens have become increasingly sensitive and they allow us to identify HBV disease and provide us with information regarding infectivity. They have, in addition, become useful epidemiologic markers and have established a role of the HBV in such divergent diseases as polyarteritis nodosa and hepatocellular carcinoma.

Hepatitis B Surface Antigen (HBsAG)

Bloomberg described the first antigen in 1963. It was discovered in the serum of an Australian aborigine. For that reason it was initially called the Human Australian antigen. In several years it became evident that the antigen was associated with post-transfusion hepatitis and eventually was indentified as a marker of serum hepatitis and referred to as Type B Hepatitis.

It is now known that the HBsAG is located on the surface of the viral capsid. It has been associated with three structures identified by electron microscopy: The Dane Particle, a tubular viral fragment and a spherical viral fragment.

Four major antigenic subtypes of HBsAG are recognized. The subtypes are useful in epidemiologic investigations, but have no value in predicting virulence or chronicity of HBV disease. HBsAG is found free in the serum of acutely ill patient in high titer. It can also be demonstrated in the cytoplasm of infected hepatocytes by immunohistologic staining.

Hepatitis B Core Antigen (HBcAG)

The HBcAG represents an antigenic determinant located in the circular DNA core of the HBV. This antigen is never found free in the serum of the infected patient and can only be identified by immunohistologic staining of infected hepatocytes, where it is present only in the cell nucleus. The antigen has also been extracted from the Dane Particle.

Hepatitis Be Antigen (HBeAG)

The HBeAG is the most recently described antigenic component of the HBV. It is found only in HBsAG positive serum, but unlike the surface antigen, the HBeAG is not a lipoprotein but a soluble protein that exists free in the serum, unassociated with viral particles during the active phase of the disease. The HBeAG does not represent a surface component of the HBV, but appears to reside inside the viral capsule. Its exact function remains unknown. Newer, more sensitive radio-immunoassays now allow the detection of the HBeAG in virtually 100% of patients acutely infected.

The Immune Response to HBV

HBV induces a significant immune response in the host. Cell mediated and humoral immune responses occur and both appear to play an important role in the resolution of the viral illness.

The cell mediated immune response appears to be important for eradication of viral replication. Immunosuppressed transplant patients and patients on chronic hemodialysis both have defective cell mediated immunity and normal humoral immunity. HBV disease in these individuals tends to remain chronic and indolent and may represent their inability to eradicate the viral replication.

HBV is not known to be cytopathic and in certain instances the host immune response may play a pathologic role. A misdirected cell mediated immune response has been offered as a pathologic mechanism in the "lupoid" variant of chronic active hepatitis. The response to steroids in these individuals appears to offer some support for this hypothesis.

In the case of fulminant hepatitis, the humoral response may contribute to an immune complex induced hepatic injury (1).

The humoral response to HBV has been well defined. A distinct antibody is produced for each of the described HBV antigens.

Hepatitis B Surface Antibody (HBsAB)

HBsAB appears in the serum several weeks after the disappearance of HBsAG. Its appearance signals recovery with the rare exception of fulminant hepatitis. The HBsAB is the only serology that documents immunity to infection. After recovery from the acute illness, the titer of HBsAB gradually declines but persists indefinitely in most.

Hepatitis B Core Antibody (HBcAB)

HBcAB is the first detectable antibody in the serum, appearing shortly before the onset of clinical symptoms during a period of time when the surface antigen is also present. HBcAB is found in all acute and chronic states of HBV disease. Its presence implies nothing about immunity to HBV, but it is a sensitive marker of infection.

The recent development of an IgM specific assay may prove to be a sensitive marker of viral replication (2).

The IgG class of antibody becomes predominent in the convalescence and persists indefinitely.

Hepatitis B "E" Antibody (HBeAB)

HBeAB appears in the serum shortly after the disappearance of the HBeAG. This seroconversion occurs in most at the height of clinical illness but may be delayed years in chronic hepatitis or chronic carrier state. Its presence in the serum is not a reliable predictor of prognosis (3,4,5). The antibody can be produced in the presence of HBsAG.

DNA Polymerase

DNA Polymerase is the only enzyme known to be produced by the HBV. A sensitive assay now exists for this enzyme and its level can be quantitated in the serum of the acutely infected patient. It is felt to represent the most sensitive index of HBV replication and infectivity. In acute hepatitis, DNA Polymerase activity peaks transiently, then rapidly disappears. It may, however, persist in some chronic carriers for a number of years. Its presence in the serum correlates with the presence of complete Dane Particles. This assay remains in the hands of researchers at the present time and is not generally available in the clinics. It may, however, become important clinically in the future by allowing the identification of a subgroup of chronic hepatitis characterized by ongoing viral replication. These individuals might be responsive to antiviral therapy, and in some cases, these assays may also be useful for assessing the results of such treatment.

Clinical Interpretation of HBV Serologies

HBV disease manifests itself in several different clinical patterns. The use of HBV serologies in each of these patterns provides useful information for the clinician.

Subclinical Hepatitis

A significant percentage of HBV disease remains unrecognized clinically. In these individuals, the infection usually documented long after the fact by the presence of Hepatitis B antibodies in the serum. These individuals are asymptomatic for infection and no history of jaundice can be elicited. Most all of these individuals will have cleared the HBsAG. All three of the HBV antibodies may be present. The HBsAB alone signifies recovery and implies immunity and absence of infectivity. HBcAB is usually found in low titer and has no clinical value for this subgroup. Likewise, the HBeAB may be present.

A few patients with the subclinical HBV disease may go on to become chronic carriers or develop active hepatitis. In these individuals, the HBsAG is not cleared and the HBsAB does not appear.

Acute Hepatitis

Acute Type B hepatitis represents the most commonly encountered HBV disease. HBV serologies have proven most useful in following the course of this disease.

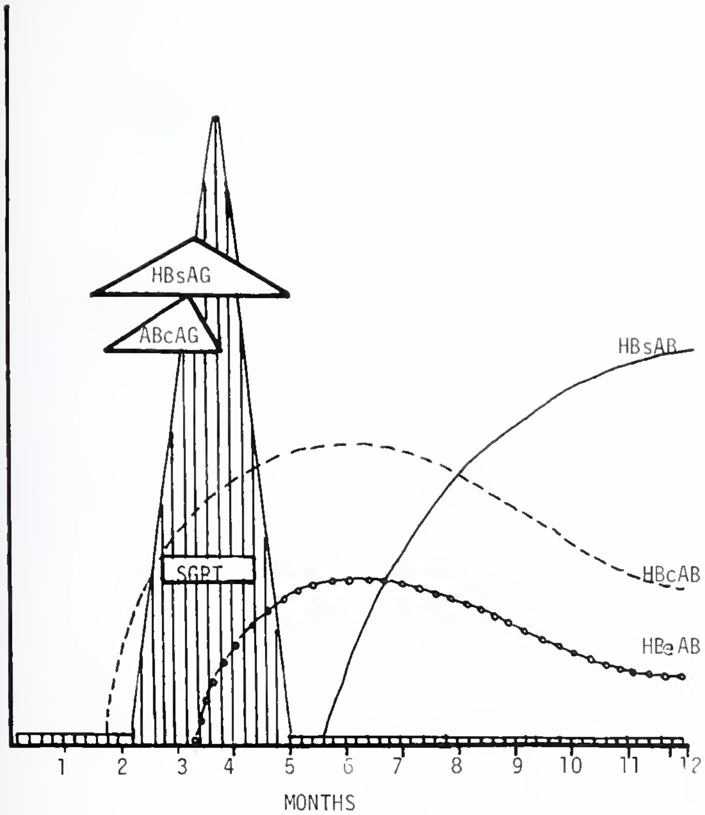

Figure 2: Serologic Events in Acute Hepatitis B

HBsAG is the first detectable serologic abnormality appearing approximately one to six weeks before the onset of transaminase elevation and clinical illness. The HBsAG disappears from the serum in most within the first three months after the onset of the clinical illness. HBsAG persists chronically in approximately 10% of those with acute hepatitis. Titers of HBsAG appear to have no clinical value in the management of acute hepatitis. Its presence suggests infectivity, but this is not absolute as HBsAG may be present in the form of incomplete viral fragments. The disappearance of HBsAG, likewise, does not absolutely assure lack of infectivity. The infectivity of donor serum without detectable HBsAG has been demonstrated, both from the early incubation period and from the gap phase of recovery (6,7).

HBsAB appears in the serum several weeks after the disappearance of the HBsAG. Its production is felt to be responsible for the clearance of HBsAG. Development of HBsAB, with rare exceptions, signals recovery from infection and the development of immunity. Donor blood with HBsAG may be safely transfused without risk of introducing HBV.

HBcAB appears in high titer almost simultaneously with the onset of clinical illness during an interval when the HBsAG is still present. With recovery, the HBcAB declines, but may persist indefinitely in a low titer. The presence of HBcAB implies nothing about recovery or immunity. Early high titers do correlate with ongoing viral replication. Recent work reveals that the early HBcAB is predominantly of the IgM subtype. In late convalescence the IgG class predominates (2).

The major clinical value of HBcAB is the detection of potential infectivity in the so-called "gap phase". This phase refers to the several week interval between clearance of the surface antigen and the appearance of HBsAB. During this interval, HBcAB is the only serological marker present to document infection. In this respect, the HBcAB represents a more sensitive indicator of potential infectivity than the HBsAG. In the future, the IgM subclass of HBcAB may prove to be a useful clinical indicator of ongoing HBV replication.

HBeAG usually appears in the serum within one week after the appearance of HBsAG and correlates with ongoing viral replication in the early phases of HBV disease.

Initially, HBeAG was felt to be a predictor of chronicity. However, with newer more sensitive assays, the HBeAG can be found in all patients with acute HBV disease and it is no longer felt to prognosticate chronicity. The HBeAG does seem to correlate with infectivity, particularly in acute hepatitis where it occurs early on in the phase of the disease and is cleared quite rapidly. In the clinical sense, the HBeAG, because it is cleared in the interval of Hepatitis B surface antigenemia, does not appear any more useful than the HBsAG as a marker of infectivity.

HBeAB appears shortly after the disappearance of HBeAG. This seroconversion usually occurs at the height of the clinical illness but may be delayed in appearance, particularly in those who develop chronic disease. Seroconversion may represent a favorable prognostic sign in some of those affected with chronic disease. In the situation of acute hepatitis, the HBeAB appears to have very little clinical significance.

Chronic Carriage of Hepatitis B Surface Antigen (HBsAG)

5 to 10% of patients infected with HBV do not clear the HBsAG and in these, the HBsAG may persist for many years of life. The HBsAB does not appear in these chronic carriers. HBcAB is present and often may be found in high titer. The HBeAG tends to persist through the early years of HBV carriage. In the majority of chronic carriers, the HBeAG disappears after a number of years followed by the appearance of the HBeAB. The significance of this delayed seroconversion remains unclear. Chronic carriers generally have asymptomatic to mild disease but progression to chronic active hepatitis and cirrhosis has been documented. A better understanding of this condition may emerge with longer prospective studies utilizing HBV serologies and DNA Polymerase activity.

Chronic Active Hepatitis (CAH)

No pattern of HBV antigens typifies CAH, and at the present time, no serologies predict progression to this disease. The underlying pathologic mechanisms remain uncertain. There is growing speculation that the histiologic picture results from a number of different disease mechanisms. In some, continued active viral replication may be the perpetrator of ongoing tissue

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injury. In others, the viral replication appears to have long ceased and may have activated an auto-immune mechanism that perpetuates the injury. Current research efforts continue to attempt to subclassify the forms of this disease into categories that may be amenable to specific therapies.

Fulminant Type B Hepatitis

Fulminant Type B hepatitis occurs in approximately 1% of those with acute Type B hepatitis. In this interesting situation the HBsAG is found in relatively low titer, often concomitantly present with the HBcAB and HBsAB. This pattern is suggestive of immune complex formation which may contribute to the rapid early deterioration in this disease.

The HBeAG and HBeAB have not been well studied with respect to this disease.

Serologic Patterns	Clinical State
HBsAG	Incubation phase or subclinical hepatitis
HBsAG + HBcAB	Acute hepatitis chronic carrier state
HBsAB + HBcAB	Acute or distant convalescence and immunity
HBcAB	Gap phase of recovery potentially still infective
HBsAG + HBcAB + HBsAB	Fulminant hepatitis

Table 1: Serologic Patterns in HBV Disease

Summary

The development of sensitive assays for HBV antigens and their perspective antibodies provides the clinician the means to document infection, to assess infectivity and to establish recovery. The advances made in the immunology of HBV have been responsible for the recent development of an effective HBV vaccine which promises to have a significant impact on HBV disease.

Further efforts are underway to identify the immunologic factors which may predict chronicity or development of chronic active hepatitis. In addition, it may be possible in the future to identify subclasses of chronic active hepatitis which may be specifically amenable to antiviral therapy or corticosteroids.

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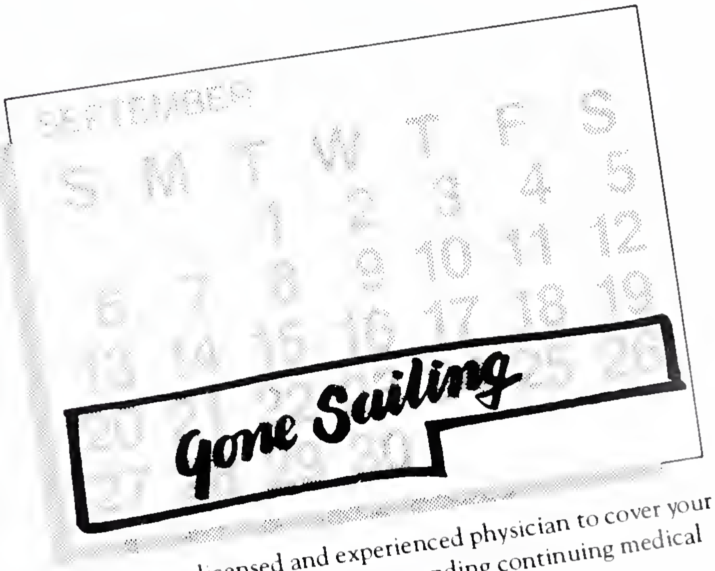

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- *Organized medicine plays an important part in underwriting activities, loss prevention and claims handling through active participation by medical society peer review committees.*
- **MIEC** *maintains reinsurance in accordance with prudent and conservative insurance practice.*
- **MIEC** *has policyholders surplus over $14 million. As of August 1, 1981, surplus contributions are no longer required by policyholders of* **MIEC**.

For information contact **Alaska State Medical Association, 4107 Laurel Street, Anchorage, Alaska 99504, (907) 277-6891**

Medical Insurance Exchange of California
Medical Underwriters of California Attorney-in-Fact
Three Embarcadero Center, Suite 1350, San Francisco, California 94111, Phone (415) 393-5000 (call collect)

PHYSICIAN SELF ASSESSMENT

CHOOSE THE ONE MOST APPROPRIATE ANSWER

1. The timing of surgery in gallstone pancreatitis is controversial. Which course of action would be most efficacious?
   a. Early surgery (same admission after subsidence of symptoms).
   b. Early surgery, during the attack.
   c. Delayed elective cholecystectomy.
   d. No surgery.

2. Which of the following has not been possibly helpful in mastalgia due to fibrocystic disease?
   a. Thyroid hormone
   b. Danazol
   c. Bromocriptine
   d. Reduction of dietary xanthines
   e. Vitamin A

3. Stab wounds of the abdomen are best managed:
   a. Operatively to exclude interabdominal injury.
   b. Selectively to avoid unnecessary negative laparotomy with peritoneal lavage as the guide line
   c. Expectantly, based on clinical signs.
   d. Operatively after obtaining a stabogram.

4. Which of the following is most useful in the diagnosis of acute cholecystitis?
   a. Gallbladder ultrasonography
   b. Oral cholecystography
   c. Intravenous cholangiography
   d. HIDA Scan

5. Breast carcinoma is managed acceptably by all of the following except:
   a. Modified radical mastectomy.
   b. Extended radical mastectomy.
   c. Segmental mastectomy with irradiation therapy.
   d. Irradiation alone.
   e. Excisional biopsy.

6. Inflammatory carcinoma of the breast is:
   a. Categorically inoperable.
   b. Can be managed with radical mastectomy in combination with preoperative X-ray and chemotherapy.
   c. A frequent presentation of breast carcinoma.
   d. Managed best by palliative measures.

7. Estrogen receptor assays have become an important factor in breast carcinoma management. The following statements are true except:
   a. It is a cystoplasmic protein responsible for uptake of estrogen by tumor cells.
   b. It is rarely seen positive in lobular carcinoma of the breast.
   c. Tumor cells tend to lose estrogen receptor positivity with increasing duration of disease.
   d. Estrogen receptor presence does not correlate with the clinical stage of the disease, axillary nodal status or location of the tumor.
   e. Estrogen receptor positive tumors show an increased response rate to endocrine therapy.

8. Thoracic Outlet Syndrome is best defined by all of the following except:
   a. Electromyography and nerve conduction times.
   b. Is easily confused with ulnar nerve entrapment.
   c. Presents as neurologic symptoms in the majority of patients.
   d. Can be manifested as venous obstruction.
   e. Is managed conservatively in the majority of cases.

9. In penetrating injuries of the colon:
   a. They are managed differently in military setting as compared to the civilian population.
   b. Primary repair of the colon can be undertaken at an interval of 8 hours after injury.
   c. Left colon injuries behave differently than right colon injuries as far as healing is concerned.
   d. Proximal colostomy diminishes anastomotic complications.

10. Perforation of the sigmoid colon secondary to diverticulitis:
    a. Is best managed by Hartman resection rather than diversion.
    b. Does not seem to be greatly affected by prior steriod use.
    c. May become a less frequent presentation of diverticulitis as our population ages.
    d. Has an increased mortality related primarily to age of the patient.

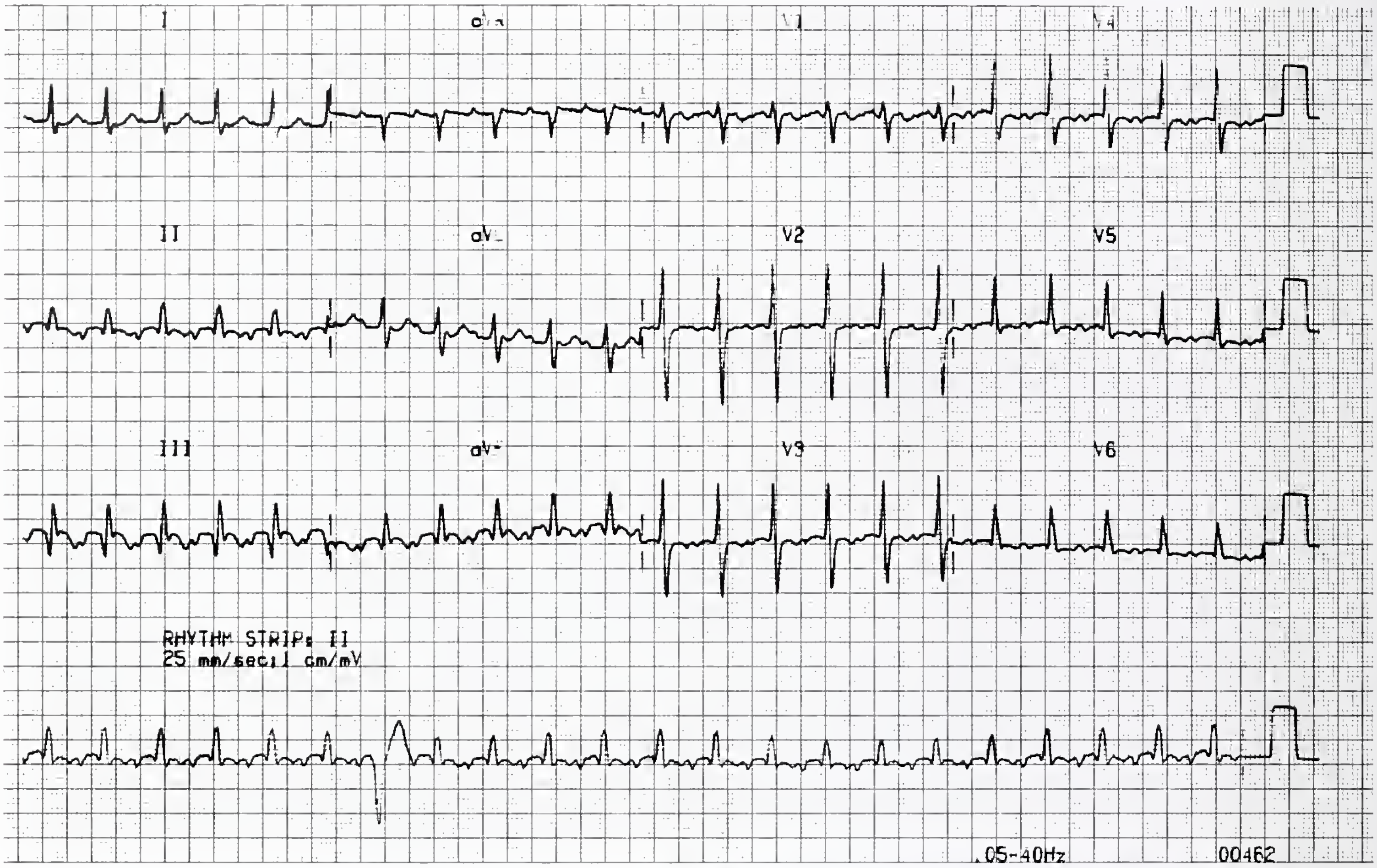
EKG OF THE MONTH

This electrocardiogram belongs to a 75 year old man. He had been hospitalized in 1975 for a myocardial infarction. Subsequently he was symptom free until a month before the electrocardiogram was recorded. During this month he experienced three faints. Each occurred without warning and lasted less than one minute. During the last syncopal episode he struck and lacerated his scalp. After each faint he awoke immediately feeling well. There were no other symptoms.

His physical exam was normal except for the rapid heart rate. He admitted taking his own pulse and that it had been rapid for one month.

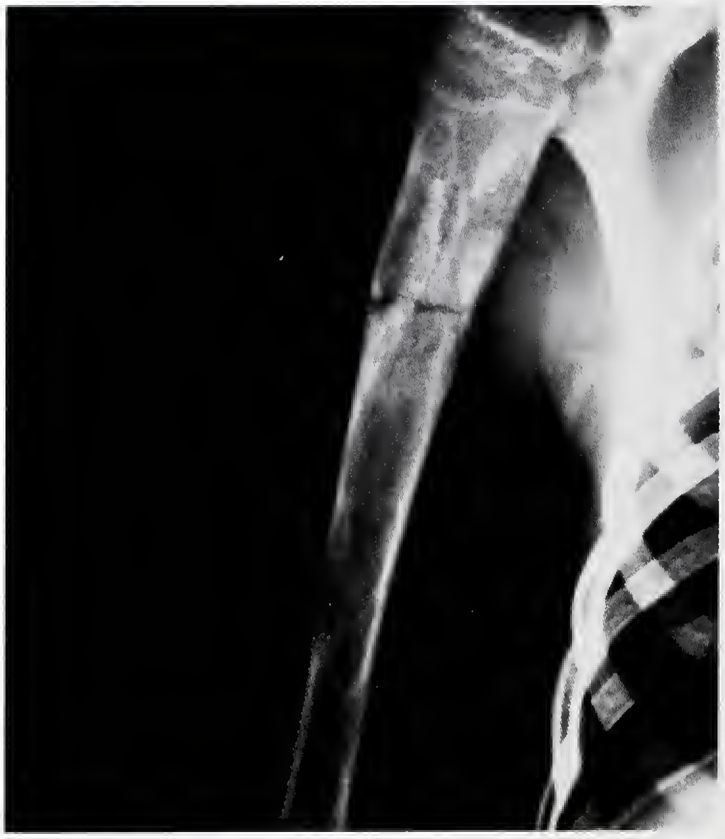
Questions:

1. What is the heart rate and rhythm?
2. Where was the prior myocardial infarction located?
3. From the rhythm illustrated in the EKG could you speculate about the cause of syncope?



X-RAY OF THE MONTH

The patient is a 10 year old child who presented with pain and swelling of the right upper arm following a bicycle accident. He was otherwise in good health. What is your diagnosis?



Motrin®
ibuprofen, Upjohn
600 mg Tablets

More convenient for your patients

Upjohn

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The Upjohn Company • Kalamazoo, Michigan 49001 USA

9043-4 July 1981

First Class First Aid

- Broad-spectrum antibacterial
- Handy applicator tip

DESCRIPTION: Each gram contains: Aerosporin™ (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and ½ oz and $^1/_{32}$ oz (approx.) foil packets.

INDICATIONS: *Therapeutically* (as an adjunct to systemic therapy when indicated), for topical infections, primary or secondary, due to susceptible organisms, as in: • infected burns, skin grafts, surgical incisions, otitis externa • primary pyodermas (impetigo, ecthyma, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection. *Prophylactically,* the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing.

CONTRAINDICATIONS: Not for use in the eyes or in the external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

AUXILIARY NEWS

State:

With the state convention just weeks away our membership chairman would like to make one last plea for members. There is a slight decline from last year, and we hope those of you who have not joined will do so. The convention program sounds exciting. Join us in Fairbanks as a voting member.

Slate of Officers:

The nominating committee of ASMAA presents the following:

President-elect -- Jane Erkman
Vice-President -- Ruby Frost
Secretary-Treasurer -- Gail Behymer
Membership -- Linda Sutherland

Delegates to National ASMA convention in Chicago June 13-16:

Aaltje Smith
Marge Muzzall

Scholarships:

This year ASMAA will present two $800 scholarships. The scholarships are given to students pursuing health related careers. Names of recipients will be announced at the state convention.

Anchorage News:

The nominating committee of the Anchorage Chapter of ASMAA announces the following slate of officers:

President-elect -- Fran Marbarger
Vice-President -- Kathy Wilder
Recording-Secretary -- Lynn Ragle
Corresponding Secretary -- Aaltje Smith
Treasurer -- Maureen Merchant

Kenai:

The Kenai Peninsula Medical Society met for its bi-monthly dinner meeting April 1 at the Anchor River Inn. Wives of the medical society members enjoyed being included.

Personal interest notes --
Dr. & Mrs. Peter Hansen will guide a group of Kenai Boy Scouts over the Chilkoot Trail this summer.

Cordova:

JoAnne Tilgner, wife of state president-elect Art Tilgner, reports on their recent trip to Washington, D.C. The Tilgners of Cordova and the Dave McGuires of Anchorage joined a California delegation studying current legislation and lobbying. In addition to a tour of the White House, the group met with their state's congressional delegation as well as other government officials.

Marge Muzzall, President
ASMAA

QUEST CHARTERS
Cruise Prince William Sound aboard the private luxury yacht, Quest, a 52 ft. motor-sailor. Sail, sightsee, fish, photograph, relax, and enjoy. Enclosed wheel house. Heated. Contact Quest Charters, P.O. Box 8-9169, Anchorage, Alaska 99508, (907) 337-6532.

An added complication... in the treatment of bacterial bronchitis*

Increasing incidence of ampicillin resistance in Haemophilus influenzae
Ampicillin-Resistant Haemophilus influenzae
H. influenzae
S. pneumoniae

Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

Ceclor®
cefaclor

Pulvules®, 250 and 500 mg

Brief Summary.
Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae), Haemophilus influenzae*, and *S pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e g . pressor amines, antihistamines, or corticosteroids

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coomb testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Usage in Pregnancy—Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus

Usage in Infancy—Safety of this product for use in infants less than one month of age has not been established

Adverse Reactions: Adverse effects considered related to cefaclor therapy are uncommon and are listed below

Gastrointestinal symptoms occur in about 2 5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad-spectrum antibiotics, colitis, including rare instances of pseudomembranous colitis, has been reported in conjunction with therapy with Ceclor

Hypersensitivity reactions have been reported in about 1 5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor® (cefaclor). Such reactions have been reported more frequently in children than in adults Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy No serious sequelae have been reported Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician

Hepatic—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). [100281R]

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S pneumoniae* or *H influenzae*[8]

Note Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever See prescribing information.

References

1 Antimicrob Agents Chemother., *8*:91, 1975
2 Antimicrob. Agents Chemother., *11* 470, 1977
3 Antimicrob. Agents Chemother , *13* 584, 1978
4 Antimicrob. Agents Chemother., *12* 490, 1977
5 Current Chemotherapy (edited by W Siegenthaler and R Luthy), II 880 Washington, D C. American Society for Microbiology, 1978
6. Antimicrob. Agents Chemother., *13* 861, 1978
7 Data on file, Eli Lilly and Company
8 Principles and Practice of Infectious Diseases (edited by G L Mandell, R G Douglas, Jr., and J E. Bennett), p 487. New York John Wiley & Sons, 1979

Lilly

Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

Eli Lilly Industries, Inc.
Carolina, Puerto Rico 00630

200066

STETHESCOOPS by the STETHESNOOPS

These is something fishy going on with the placenta pans at Providence.

Two of our noble physicians are taking a post graduate course in Amway.

Mt. McKinley is attracting Dr. Greg Higgins of Seward this summer. How about you, George?

Resurrection Bay Hospital in Seward needs a miracle resurrection on their finances. Help!

Richard McKinney joined the Resurrection Bay Health Center in August of '81, coming up from a FP residency at Baylor in Houston, Texas.

Our Juneau spy reports:

The newly elected president of the Juneau Medical Society is Eric Olsen.

Dr. Phil Fagan heads up the ER Dept. at Bartlett Memorial.

Dr. Keith White returns to Juneau in June to open a F.P. in association with two other new physicians, Dr. Sara Isto and Dr. Paul K. Simpson.

Dr. Donald R. Rooney has been elected Vice-President of the American College of Radiology.

Dr. Lenart Ceder will be practicing Orthopedic Surgery with Dr. Jon Reiswig.

Dr. Tom Stengl has opened his office in Otorhinolaryngology.

We hear the hospital administration is very successful in Nome.

George Longenbaugh is standing straight and tall - how does it feel now?

Which is worse, losing your dog team or your wife? (or both?)

For those not concerned with the Malthusian problem.

3/24/82 a son, Christopher to Lynn and Bill Clark.

3/28/82 a son, Peter to the Peter and Fran Marbargers.

3/30/82 a daughter, Margaux Ann to Steve and Jo Ann Menaker.

3/31/82 a son, Robert Michael to Roland and Judy Gower.

4/1/82 a daughter, Adrian to Meg and Edward Mohn.

Congratulations to all.

The prize however goes to that very eager father who just could not wait for the obstetrician.

We hear there is an evangelist M.D. in Brooks Brothers suits at ANMC. Talk about miracles!

And our favorite fraternity man may be getting married.

Mid-life crisis is plaguing yet another colleague - he has been seen ogling the student nurses.

Does Mike H. still post signs in his garage like: "Open door before backing out"?

Attention spies -

Got a bone to pick, someone who needs a quick stab? Please send any and all info to Dr. Wm. Bowers, 4050 Lake Otis Parkway, Anchorage, Alaska 99504. The STETHESNOOPS will be glad to sort it out.

POST GRADUATE COURSES

June 5-9	**ASMA Annual Convention** - Chena Hot Springs and Fairbanks For Information: 277-6891
August 5-6	**WAMI Sponsored OB/GYN Summer Update** Providence Hospital For Information: 276-4511
October 1982	**Cardiology Conference** Providence Hospital
November 1982	**Pediatric Symposium** Providence Hospital

Medical Condominiums

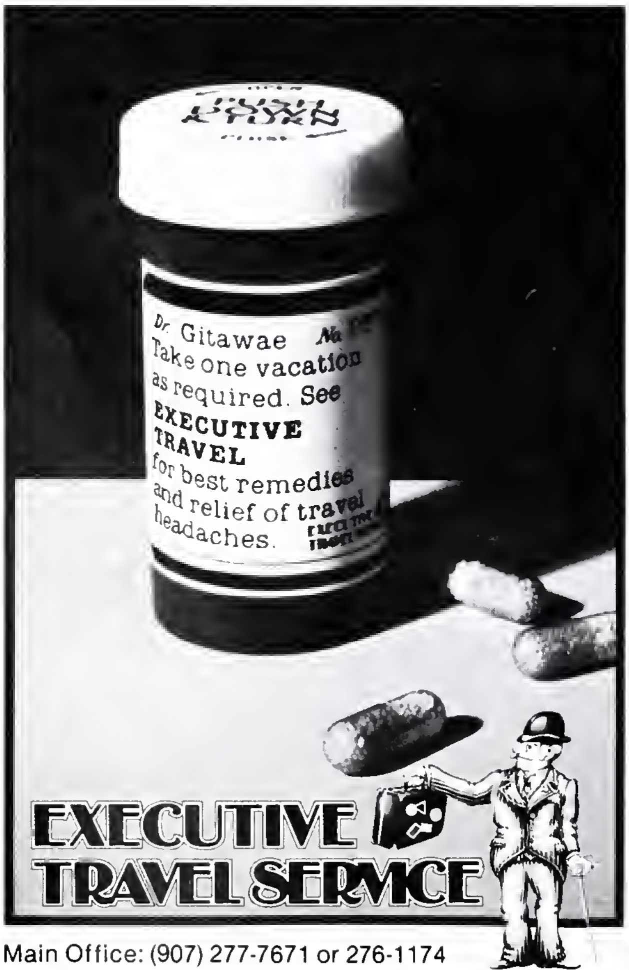
For Sale or Lease

- Completion August, 1982 -

For information contact:

Bill Lawrence

(907) 276-2344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1565 S. Bragaw, Anchorage

LETTER TO THE EDITOR

About a year ago in May, I lightheartedly took up sleep studies at the request of R.N. and E.E.G. Technician Edna Borovich. Dr. Scott Emery (USAF Neurologist) and his wife, Psychiatrist Dr. Carla Hellekson, enthusiastically added their support. To my embarrassed surprise, I found a whole area of medicine that not only ties together several different specialities (Neurology, Pediatrics, ENT, Pulmonology and Psychiatry) but added a few interesting features of its own. It was Sleep.

I'd like to share some of the more interesting points with you.

First of all, sleep is divided into two general categories - non-dreaming sleep, also called Non Rapid Eye Movement (NREM) sleep, and dream sleep or Rapid Eye Movement (REM) sleep. Dream or REM sleep is peculiar only to mammals. People start to dream about 90 minutes or more after falling asleep and we spend 20% of our sleep in dreams.

During NREM sleep, our brain metabolism is slightly reduced, but we retain our responsiveness to stimuli of increased CO_2 and decreased O_2 and upper airway irritants. We maintain body tonus and DTR's. Our temperature is stable. Ah, but during REM all this is changed! Brain metabolism increases to the level of the waking state or greater; we no longer respond to hypercapnea or upper airway irritation, and less well to hypoxia. Our bodies are paralyzed except for our diaphragm and eyes, and our deep tendon reflexes are no longer elicitable. Respiration, blood pressure and pulse may vary erratically. Temperature control is suspended and we are at the mercy of the environment.

These changes do not appear to harm a normal individual, but there are several disease states where REM sleep certainly seems hazardous - such as in patients with COPD, patients with large tonsils or flabby redundant upper airways, patients with bulbar polio, and most of all, patients who are excessively fat.

Periodically we put ourselves at increased risk, such as when we take a good stiff drink in the evening. It results in lowering our oxygen saturation during sleep as well as causing episodes of apnea while we sleep. Sleeping medication is another area of hazard. They, too, make one more prone to oxygen desaturation and apnea. Besides, they shortly become ineffectual in initiating and maintaining sleep. Stopping the medication invariably leads to more disruptive sleep.

These few facts are just to tantalize you and encourage an interest in sleep medicine. Meanwhile, Miss Borovich schemes to keep me out of mischief as she expands the Providence Hospital EEG lab to study sleep.

Shirley Fraser, M.D.

1982 ASMA ANNUAL MEETING

June 5-8, 1982
Captain Bartlett Inn & Chena Hot Springs Resort

PROGRAM

SATURDAY, JUNE 5, 1982		CAPTAIN BARTLETT INN
12:00 Noon	Arrival & Registration	Lobby
1:00	Exhibit Booth Set-up	B Section
1:30	ASMA Council Meeting	Trophy Room
5:00	Salmon/Halibut/BBQ	Alaskaland
7:30	SCIENTIFIC SESSION	Fireplace Mtg Room
	"Bush Medical Care--Then & Now"	
	Jim Sozoff	
	Rose Attla Ambrose	
	George Attla	
	FILM, "Spirit of the Wind"	

SUNDAY, JUNE 6, 1982		
7:30 A.M.	Registration	Lobby
8:00	ASMA Business Session	Trophy Room
	"American Medical Association Activities"	
	Alan Nelson, M.D.	
10:30	SCIENTIFIC SESSION	Fireplace Mtg Room
	"Natural History of a Marriage"	
	Gordon Deckert, M.D.	
12:00 Noon	ALPAC Annual Luncheon	Fireplace Mtg Room
12:00	ASMA Auxiliary Luncheon	Trophy Room
	"Alaska Women in Politics"	
1:30 P.M.	SCIENTIFIC SESSION	Fireplace Mtg Room
	"Marriages We Have Seen" and	
	"In the Beginning was the Face"	
	Gordon Deckert, M.D.	
3:15	SCIENTIFIC SESSION	Ron Tinsley Residence
	"Physiological Demands on a Mushing Team"	
	Ron Tinsley, M.D.	
	DOG TEAM DEMONSTRATION	
6:00	DINNER CRUISE	Riverboat "Discovery"
	Cocktails hosted by Fairbanks Medical Association	

MONDAY, JUNE 7, 1982		
8:00 A.M.	SCIENTIFIC SESSION	Fireplace Mtg Room
	"Existential Position Predicts Interpersonal Outcome"	
	Gordon Deckert, M.D.	
9:45	PROFESSIONAL PAPERS	Fireplace Mtg Room
	"Glucose Monitoring & Insulin Infusion Devices in Control of Diabetes Mellitus"	
	Jeanne Bonar, M.D.	
	"Indication for Radiation Therapy of Primary Breast Cancer in Mastectomy Patients"	
	Charles Sternhagen, M.D.	
10:00	ASMA Auxiliary Annual Meeting	Trophy Room
11:30	Family Picnic	Alaskaland
1:30 P.M.	Bus Tour (Spouses & Kids)	Depart from Alaskaland
	Tour of Museum, Pipeline, Experimental Farm, and Rose Garden	
1:30	ASMA Business Session	Trophy Room

3:30	SCIENTIFIC SESSION	Fireplace Mtg Room
	"Researches of the Physiology & Patho-physiology of Body Temperature at the Institute of Arctic Biology"	
	John Bligh, D.S.C.	
6:00	ANNUAL MEETINGS - Specialty Societies	
	Cocktails (no host) and Dinner	
	AAFP - Alaska Academy of Family Physicians	Fireplace Mtg Room
	SPEAKER: Ernie Chaney, M.D.	
	Alaska Chapter, College of Surgeons	Bartlett Lounge
	Alaska Radiology Association	Gold Room
	SPEAKER: William Jobe, M.D.	
	ASMA Auxiliary Sponsored Dinner	Trophy Room
	SPEAKER: Ev Wenrick	
	SLIDE PRESENTATION "Four Seasons of Alaska"	
	(open to all convention attendees)	

TUESDAY, JUNE 8, 1982

8:00 A.M.	ASMA Business Session	Trophy Room
9:00	SCIENTIFIC SESSION	Fireplace Mtg Room
	"Rules that Govern our Relationships"	
	Gordon Deckert, M.D.	
10:30	PROFESSIONAL PAPERS	
	"Study of Mouth Cultures from Grizzly Bear Bites"	
	Richard Parry, M.D.	
	"Arthroscopic Surgery of the Knee"	
	David McGuire, M.D.	
12:00 Noon	Lunch - on your own	
1:30	Bus to Chena Hot Springs	
1:30	OPEN RECREATION	CHENA HOT SPRINGS
	Hike, Swim, Games	
5:00	Final ASMA Business Session	
6:00	No Host Cocktails	
7:00	President's Banquet and Award Presentations	
8:30	"The Heretics are our Own Children"	
	Gordon Deckert, M.D.	
10:00	Transportation back to Bartlett	

WEDNESDAY, JUNE 9, 1982

9:00 A.M.	ASMA Council Meeting	Chena Resort

1982 ASMA CONVENTION
CONTRIBUTING AND EXHIBITING COMPANIES

Abbott Laboratories
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Armour Pharmaceutical
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Bristol Laboratories
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Syntex Laboratories
Upjohn Company
U. S. Army Medical Department
William H. Rorer, Inc.
Wyeth Laboratories

Health and Safety Tip
From the American Medical Association

535 North Dearborn Street/Chicago, Illinois 60610

First Aid Readiness Vital to Home Safety

Know Home First Aid

Knowing how to give first aid for an illness or injury is an important aspect of home safety.

Keep a first aid guide handy so that you will know how to use home medical supplies safely and effectively. The AMA's Handbook of First Aid and Emergency Care is a good resource.

If possible, arrange for first aid training for the adults and older children in your family. The American Red Cross offers classes in many communities; check your local chapter.

A family medical chart can provide vital information on each family member that you, doctors and paramedics may need in an emergency, such as known allergies and vaccination dates. List important emergency telephone numbers as well, including your doctor, emergency medical service or ambulance service, and the nearest hospital.

Knowing the best route to the nearest hospital can save critical minutes when an ambulance or paramedic team is not available and you must drive yourself or a victim to the hospital.

Emergency medical identification, such as a bracelet, necklace or wallet card, could help to save your life if you are unable to speak because of unconsciousness or a serious accident. This identification is especially important for people who have conditions such as diabetes, epilepsy, glaucoma, or hemophilia, or who have allergic reactions to certain medications or to insect stings.

An emergency medical I.D. bracelet or necklace is generally better than a card because it is more visible. Ask your doctor, hospital emergency room or local medical association where they may be ordered.

Meanwhile, you can make your own emergency medical information cards for yourself and each member of your family. Include name, address, telephone number, relative's name and number, doctor's name and number, vaccination dates, any serious medical conditions, medication taken regularly, allergies and any other important information.

January, 1981
Science News Service
AMA

Detach or Copy this Page and Mail with Manuscript

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Alaska Medicine publishes original material of interest to our subscribers. The Editor invites brief letters, commenting on articles published in recent issues, as well as announcements of postgraduate courses, and other items of interest to our subscribers.

Original manuscripts will be accepted with the understanding that they are contributed solely to **Alaska Medicine**. A statement transferring copyright from the author(s) to **Alaska Medicine** will be required before the manuscript can be accepted for publication. Such a written transfer, which previously was assumed to be implicit in the act of submitting a manuscript, is necessary under the new U.S. Copyright Law.

Submit manuscripts in duplicate to the Editor:

William H. Bowers, M.D.
ALASKA STATE MEDICAL ASSOCIATION
4107 Laurel Street #1
Anchorage, Alaska 99504

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__ Two complete sets of manuscripts, double-spaced throughout on 8½ X 11 paper with 1½" margins all around.

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ANSWERS TO PHYSICIAN SELF ASSESSMENT

1. *a.* Brit Surg 68: 758, 1981
   Surg 88: 345, 1980
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   Brit Med J, 6, 156; 234, 1979
   Am J Surg, 142: 764, 1981
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    Am J Surg, 142: 712, 1981
    Am J Surg, 141: 122, 1981
    Ann Surg, 192: 743, 1981

X-RAY OF THE MONTH ANSWERS

Differential Diagnosis
  Fibrous Dysplasia
  Bone Cyst
  Enchondroma
  Non-Ossifying Fibroma

Diagnosis: Fibrous Dysplasia

The film shows a transverse fracture of the proximal humerus with minimal displacement of the fracture fragments. The fracture line is through a pre-existing, primarily lytic lesion and represents a pathological fracture.

The lesion is primarily metaphyseal in location, sparing the epiphsis. The cortex is intact and thickened with a scalloped inner margin. There is some widening or expansion of the bone. There is no periosteal new bone or periosteal reaction. There is no cortical defect often seen in enchondromatosis and non-ossifying fibromas. Non-ossifying fibroma is typically eccentric in location as well. The findings in this case are most consistent with fibrous dysplasia.

Fibrous dysplasia is a developmental disturbance caused by a germ plasma defect involving proliferation and maturation of fibroblasts. The variable amount of bone present accounts for the range of roentgen density, from radiolucent to a ground glass appearance. The lesion may be monostotic or polyostotic; polyostotic forms are often unilateral. The disease begins in younger individuals with equal incidence in males and females. Localized pigmentations occur in about one-third of the patients with polyostotic disease. A marked sclerotic reaction may occur involving the skull. There may also be multiple, irregular, radiolucencies in the calvarium. Expansile lesions of the mandible occur in some patients.

The patient presented later developed a mandibular lesion. Malignant degeneration occurs rarely in the disease, usually osteogenic sarcoma with a few fibrosarcomas and chondrosarcomas reported. The lesions tend to stablize in adulthood.

REFERENCES

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EKG OF THE MONTH ANSWERS:

1. The ventricular rate is 130 beats per minute. The rhythm is atrial flutter with 2:1 A-V block. One PVC is present in long lead II. The upward peaks of the atrial waves can best be seen in lead AVL. Note that the atrial rate is 260 beats per minute. Usually atrial rates above 220 are atrial flutter. [Hint: Whenever you see a regular ventricular rate from 130 to 150 with 2:1 block, atrial flutter should be suspected.]

2. Large Q waves present in leads II, III, AVF indicate a prior inferior wall myocardial infarction. The age is difficult to establish from this tracing but our history suggests an old infarction.

3. The three changes in rhythm associated with syncope that might be seen with atrial flutter and block are:

a) sudden conversion of 2:1 to 1:1 conduction leaving the patient with a sudden drop in cardiac output due to inadequate diastolic filling time at a heart rate of 260. This rhythm is uncommonly seen, but is more likely if there is normal A-V conduction.
b) a prolonged period of asystole after spontaneous conversion from atrial flutter to sinus rhythm. These periods of no heart beat are common in sick-sinus syndrome.
c) the single premature ventricular contraction suggests the possibility of paroxysmal ventricular tachycardia.

Of all the possibilities, (a) seems the most likely for the patient. He noted no alternations between fast and slow heart rates which one commonly sees with sick-sinus syndrome. His rhythm was monotonously present during all visits and the syncope occurred with activity (most likely time for 1:1 conduction).

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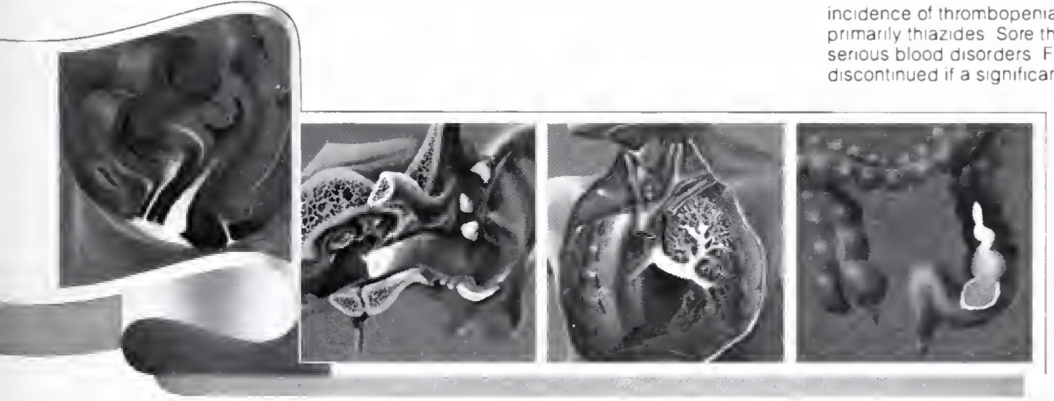
Bactrim is useful for the following infections when due to susceptible strains of indicated organisms (see indications section in summary of product information):



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in acute otitis media in children... effective against both major otic pathogens...with *b.i.d.* convenience

in acute exacerbations of chronic bronchitis in adults... clears the sputum and lowers its volume...on *b.i.d.* dosage

in shigellosis... faster relief of diarrhea than with ampicillin[2]

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii.* It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. Limited clinical information presently available on effectiveness of treatment of otitis media with Bactrim when infection is due to ampicillin-resistant *Haemophilus influenzae*. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis. To date, this drug has been tested only in patients 9 months to 16 years of age who were immunosuppressed by cancer therapy.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: *General:* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.
Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.
URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:
Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.
Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.
For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.
ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:
Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.
PNEUMOCYSTIS CARINII PNEUMONITIS:
Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: *Double Strength (DS) tablets*, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100, Tel-E-Dose® packages of 100; Prescription Paks of 20 and 28. *Tablets*, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40. *Pediatric Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry-flavored—bottles of 100 ml and 16 oz (1 pint). *Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).

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1. Rubin RH, Swartz MN: *N Engl J Med 303* 426-432, Aug 21, 1980. 2. Data on file, Medical Department, Hoffmann-La Roche Inc.

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*due to susceptible strains of indicated organisms

Please see previous page for summary of product information.

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ALASKA MEDICINE

Volume 24, Number 4
July/August 1982

THE PATIENT THINKS HE HAS HEART TROUBLE...

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At times like this, Valium (diazepam/Roche) can be a potent therapeutic ally. It works promptly. Within just a few hours, the patient begins to feel calmer. And in a few days, anxiety relief not only becomes more pronounced but a noticeable reduction in anxiety-generated somatic symptoms also occurs.

Equally important, Valium is generally well tolerated. Side reactions more serious than drowsiness, ataxia and fatigue are rare. Patients should, of course, be cautioned against driving or drinking alcohol while on Valium therapy. Periodic reassessment of the need for antianxiety medication should also be performed.

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diazepam/Roche
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Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic Symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy)
The effectiveness of Valium (diazepam Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies The physician should periodically reassess the usefulness of the drug for the individual patient
Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age Acute narrow angle glaucoma may be used in patients with open angle glaucoma who are receiving appropriate therapy.
Warnings: Not of value in psychotic patients Caution against hazardous occupations requiring complete mental alertness When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and or severity of seizures Advise against simultaneous ingestion of alcohol and other CNS depressants Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months After extended therapy, gradually taper dosage Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

> *Usage in Pregnancy:* **Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration The clinical significance of this is unclear
Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia constipation, headache, incontinence, changes in salivation slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy
Dosage: Individualize for maximum beneficial effect. *Adults* Anxiety disorders, symptoms of anxiety, 2 to 10 mg b i d to q i d , alcoholism, 10 mg t i.d. or q i d in first 24 hours, then 5 mg t i d or q i d as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t i d or q i d , adjunctively in convulsive disorders, 2 to 10 mg b i d to q i d *Geriatric or debilitated patients* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated (See Precautions) *Children*. 1 to 2½ mg t i d. or q i d initially, increasing as needed and tolerated (not for use under 6 months)
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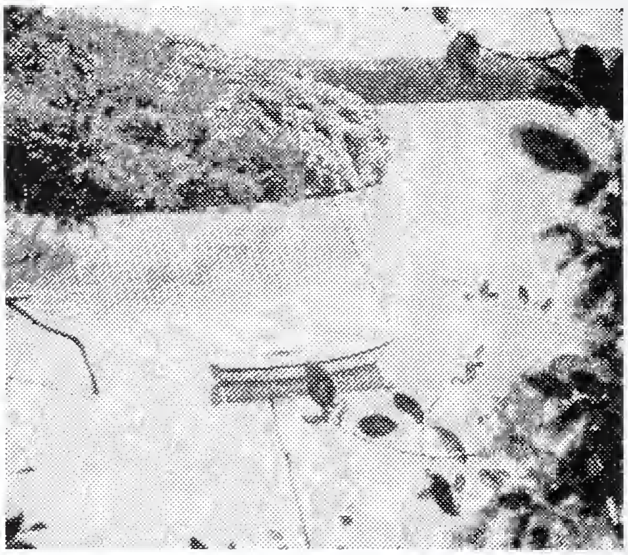

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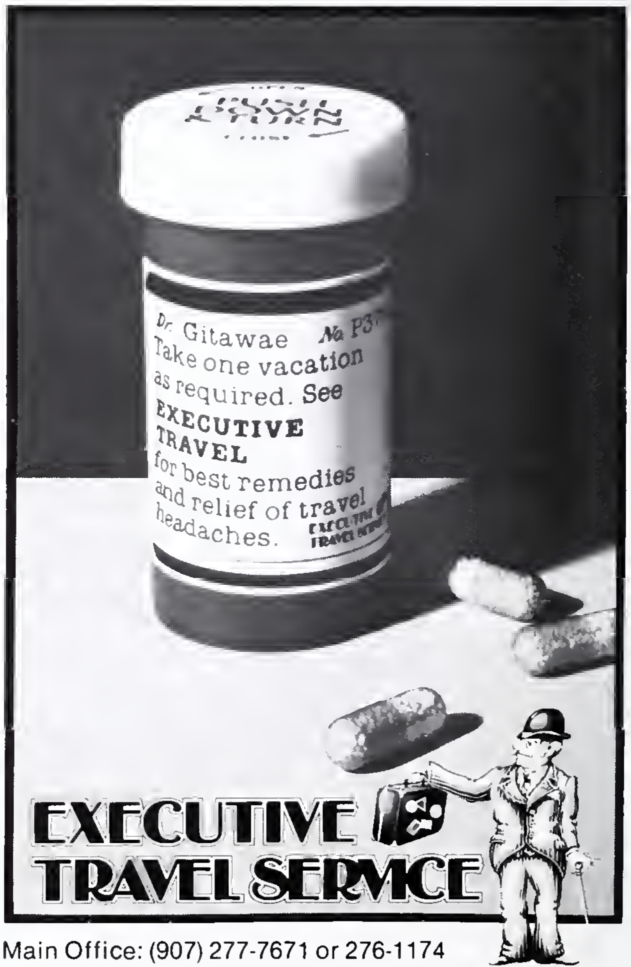
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ALASKA MEDICINE

Official Journal of the Alaska State Medical Association

4107 Laurel, Anchorage, Alaska 99504

Volume 24 July/August 1982 Number 4

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ALASKA MEDICINE is the bi-monthly journal of the Alaska State Medical Association; Alaska Medicine, 4107 Laurel, Anchorage, Alaska 99504. *ALASKA MEDICINE* is printed by Northern Printing Co., Inc., 655 Warehouse Avenue, Anchorage, Alaska 99501.
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About the cover: *Brown Bear - McNeil River, Alaska*
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ARTHROSCOPY: A PERSPECTIVE

David A. McGuire, M.D.

Ross Brudenell, M.D.

John D. Frost, M.D.

Michael H. Newman, M.D.

Within the last decade, arthroscopy has become an increasingly common surgical method. Familiarity with the use of the arthroscope has led surgeons to attempt surgical intra-articular procedures. Intially these efforts were restricted to loose body removals, synovial biopsies, and excision of synovial plicae. Experience has led to attempts at more difficult operations. Presently most meniscal problems can be managed by closed arthroscopic means. Future developments may allow ligamentous reconstruction or even joint resurfacing by arthroscopy.

The first recorded arthroscopy of the knee was done by Professor Kenji Takagi of Tokyo, in 1920. Similar efforts were undertaken by Eugen Bircher in Switzerland and Michael Berman in the USA (1). In 1973, the International Arthroscopy Association was founded. Since that date there has been rapid rise in the interest, use and application of the arthroscope. Today there are at least ten national and international meetings each year which are concerned principally with arthroscopy. These developments have not been without controversy. Arthroscopy is sometimes seen as a solution to the world's knee problems. Occasionally it is viewed as meddlesome, time consuming, expensive and more show business than science. Reality probably lies somewhere between.

Most arthroscopes in use today are rigid rod-lens systems. The rod lenses are surrounded by fiberoptic bundles which are encased in a rigid metal tube. Most arthroscopes have an outside diameter of 2 to 5 mm. Four to 5 mm outside diameter scopes are most commonly used. An incandescent light source, attached to the arthroscope via a fiberoptic cable, provides sufficient illumination for most joints. Saline, carbon dioxide or room air is used to distend the joint to allow visualization.

Arthroscopy may be accomplished by direct viewing through the ocular of the arthroscope. This approach has the advantage of easier orientation for the operator. However, the assistant and other operating room personnel are not able to see what is happening within the joint. Cooperation and assistance are consequently diminished. The positions assumed by the arthroscopist are frequently fatiguing.

Mini-television sets, weighing six ounces or less, are now available. These allow the projection of the arthroscopic image on the television screen for all to see. Assistance and cooperation from operating room personnel is markedly improved. The comfort of the surgeon is abetted. Orientation, however, is more difficult and is yet another technique to be mastered by the surgeon. Mini camera systems retail for about $10,000. The advantages of television seem to outweigh the disadvantages. The routine use of video cassette recording systems in conjunction with the television camera allows documentation for medical, legal, teaching and other purposes.

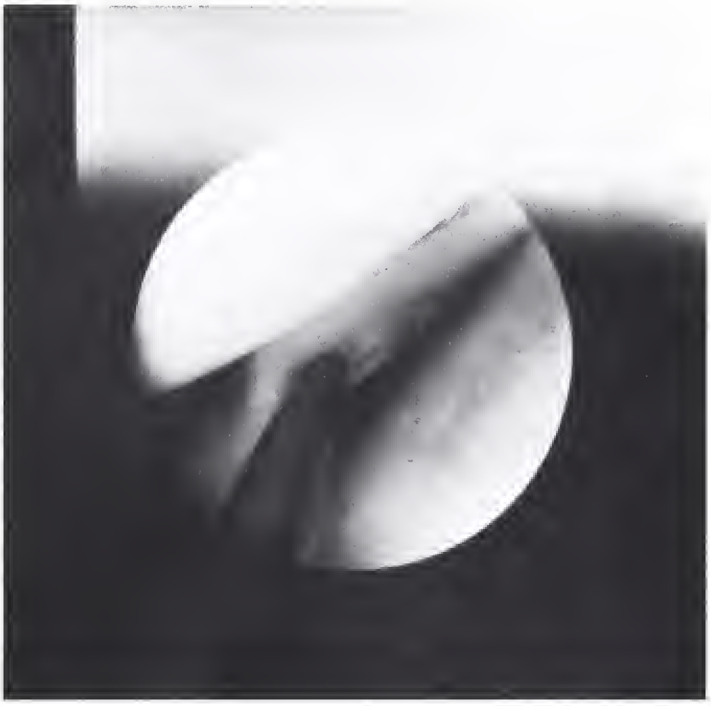

Fig. 1 - Vertical Cleavage tear, medial meniscus, left knee, with probe in tibial aspect of tear. Femur above, tibia below.

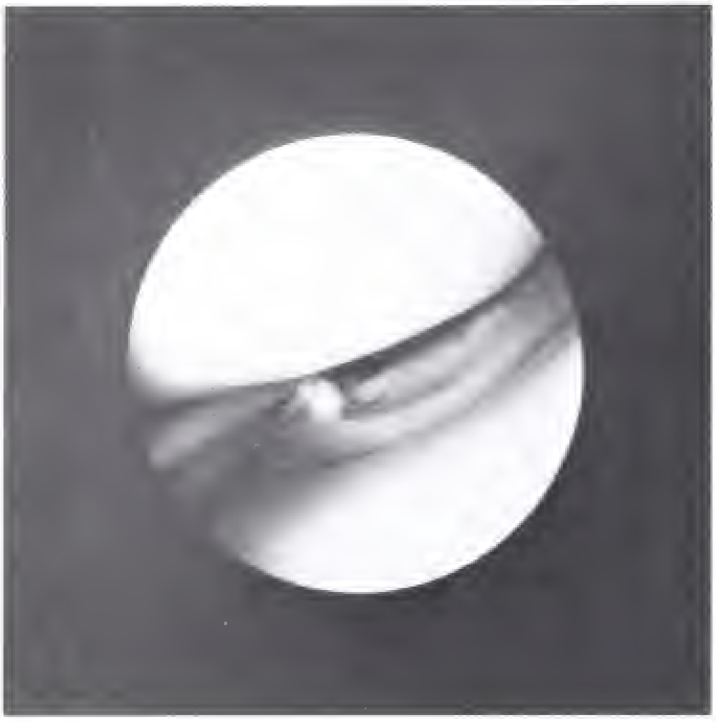

Fig. 2 · Same tear as Fig. 1, with probe on superior or femoral surface of meniscus.

Surgical instruments relating to arthroscopic surgery have undergone rapid development in recent years. Motorized shavers and meniscus cutters, which are safe and effective, are now available. Basket forceps, hooked scissors, miniature knives and probes are all essential to arthroscopic surgery. These instruments are expensive but they greatly facilitate arthroscopic procedures.

Most arthroscopic procedures are done in an operating room under general anesthesia usually with an operating tourniquet. They can be done under local anesthesia with no tourniquet. However, problems of patient relaxation and time needed to complete the procedure have led many patients and surgeons to choose general anesthesia. Regardless of the type of anesthesia employed, arthroscopy per se is an out-patient procedure. Most arthroscopic surgical procedures may also be done in an out-patient setting. Hospital stay is needed in the case of subsequent arthrotomy for ligamentous repair. There may be some patients with complicating medical problems who require hospitalization. Immediate ambulation, without the need for crutches is the rule rather than the exception. Exercises are usually begun immediately, or the day following surgery. Postoperative pain is significantly less than with the open procedures. Mild analgesia agents will suffice and should not generally be needed for more than seven to ten days.

What then, are the most common indications for arthroscopy and/or arthroscopic surgery? Professor Jan Gilquist, of Sweden an ardent proponent, has advocated arthroscopy preceding any surgical procedure on the knee. He acknowledged that in acute gross ligamentous instability this was done principally for academic reasons. A few orthopedic surgeons believe that arthroscopy is a passing thing and really has no place in the management of knee problems.

At present the arthroscope has its greatest application in the knee. Other joints are possible to to examine with the arthroscope, but these applications are limited at the moment. Those derangements of the knee which might otherwise be treated by arthrography or arthrotomy are generally well treated by arthroscopy. Such indications include persistent pain, symptoms of mechanical derangement, recurrent effusions and related problems of instability. Virtually all disorders of the menisci can be satisfactorily managed with the instrument. Patello-femoral problems, including recurrent dislocation and subluxation of the patella, can be well managed. Patellar shaving and lateral retinacular release can be accomplished. Symptomatic synecial plica may be diagnosed and excised. Osteochondritis dessicans can be accurately diagnosed and treated by intra-articular means, without the need for open arthrotomy. Ruptures and tears of the cruciate ligament may be accurately diagnosed although there is presently no satisfactory method available for their repair using the arthroscope. Chondral defects, both acute and chronic, may be diagnosed and treated. Many acute injuries previously thought to be ligamentous or meniscal have been demonstrated by arthroscopy to primary chondral defects. Loose bodies and foreign bodies may be diagnosed and removed. Primary septic arthritis can be treated by debridement and irrigation of the joint, without need for open arthrotomy. Lesions of the synovium, other than synovial plicae, such as rheumatoid arthritis may be diagnosed and treated in part using this means. Acute ruptures of the meniscus have been repaired successfully. Thus, many of the conditions previously managed by open arthrotomy may now be managed by arthroscopy and arthroscopic surgery. This decreases the need for open arthrotomy.

The advantages of menisectomy by arthroscopy are numerous. Small portals are utilized and wound

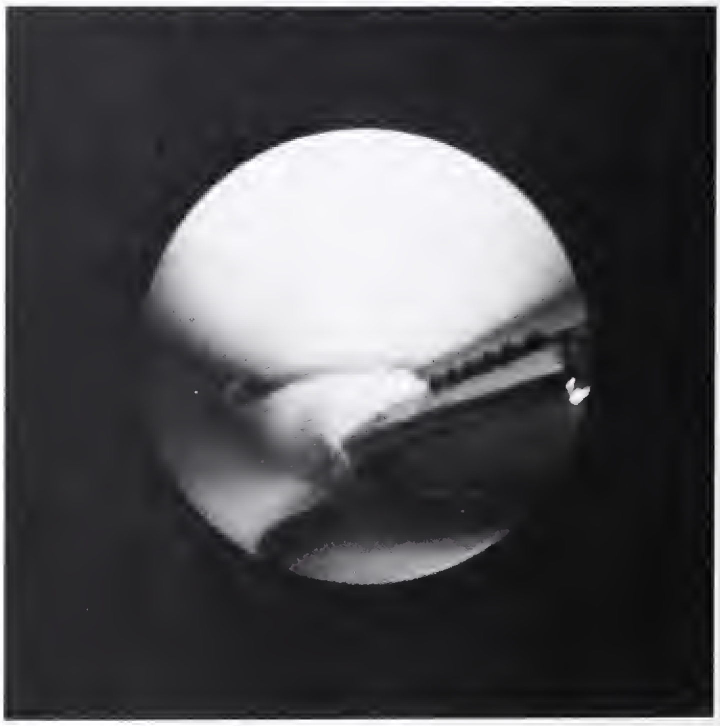

Fig. 3 · Same tear as Fig. 1. Posterior portion of meniscus severed and held with "grasper".

healing is more rapid. Disability in the postoperative period is minimized. Currently almost all meniscectomies can be managed on an out-patient basis. Patients are able to ambulate the same day, without crutches. Return to work is quicker. Some patients have returned to work the day of surgery, others as early as two days. Most patients with heavy lifting occupations require seven to fourteen days before returning to work.

The vast majority of meniscal tears are best managed by partial meniscectomy. If required, a total meniscectomy can be done arthroscopically. Whether partial arthroscopic meniscectomy produces a better long term result than open total or partial meniscectomy is not yet certain. Early results in studies of partial meniscectomy are not yet available. In any case, the lessened short term morbidity with early return to work, and elimination of the inpatient hospital stays, prompts many patients to choose arthroscopic meniscectomy over traditional arthrotomy.

The disadvantages of arthroscopic meniscectomy relate more to the surgeon than to the patient. It is a difficult technique to master. Skilled, experienced orthopedic surgeons may have difficulty achieving the transition from arthrotomy to arthoscopy. The inital efforts are usually marked by long operative times, impatient nurses and short tempered surgeons. With increasing experience, arthroscopic operative time approaches "open" operative time. Uncomplicated bucket-handle tears can be excised in thirty minutes. Equipment is expensive and fragile. Initial monetary outlay may exceed $25,000 for a complete set of instruments, arthroscopes and television camera. In spite of the disadvantages, patient satisfaction will likely demand that most meniscectomies be done arthroscopically.

Patello-femoral problems remain a source of frustration and controversy to orthopedic surgeons. Many surgeons maintain that only the most severe patello-femoral problems associated with gross dislocations and severe chondromalacia should be subject to surgery. The lessened morbidity associted with arthroscopic surgery in relation to the patello-femoral joint may change that view. Patellar shaving has been popularized by Dr. Lanny Johnson of Michigan, with the introduction of the Dyonics intra-articular shaver. The lateral retinacular release initially described by Merchant and Mercer (2) has been adapted to use arthroscopically. Cases of recurrent subluxation and dislocation of patella which are refractory to conservative treatment are usually benefited by the lateral retinacular release. The excessive lateral pressure syndrome described by Ficat (3) also appears amenable to arthroscopic lateral retinacular release. Chondromalacia of the patello-femoral joint remains a debated indication for lateral retinacular release. Nevertheless, patellar shaving in conjunction with lateral release, appears helpful in this problem. In cases of chondromalacia of the patella which require surgical treatment, the arthroscopic lateral retinacular release has less morbidity than open soft tissue procedures of open bony procedures. Early results are encouraging, however long term results are still pending. The procedure itself is a relatively simple one for the arthroscopic surgeon to perform. The lateral capsule and synovium are divided, either under direct arthroscopic control or percutaneously with an ordinary scalpel. Care must be taken to be certain that the tendon of the vastus lateralis, but not the quadriceps tendon itself, is divided. The synovium must be divided and left divided. Synovial fistulae, while much feared and discussed, have not appeared. Hemarthrosis and post-op ecchymosis are certainly present. They present a worrisome appearance but appear not to have dire

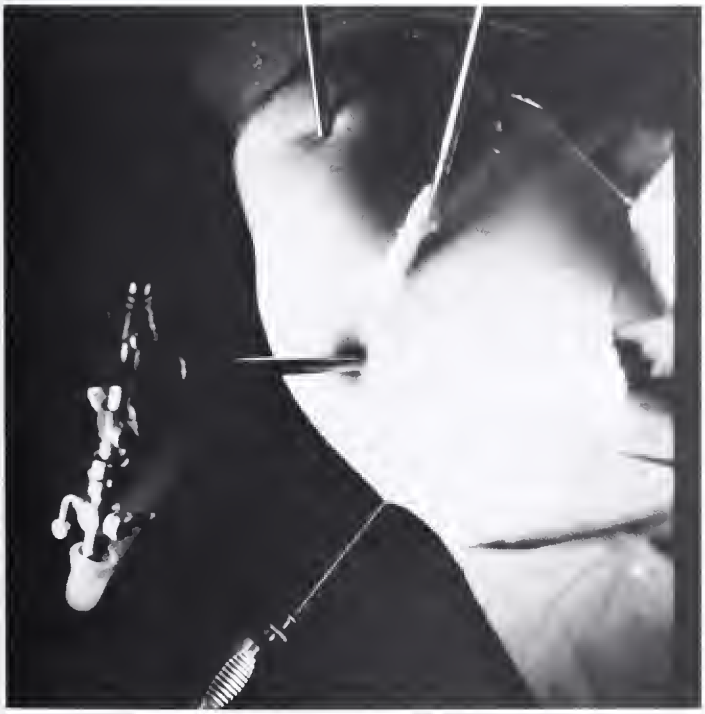
Fig. 4 - Meniscus fragment similar to that in Fig. 3 being removed via medial portal. Femur above, tibia below.

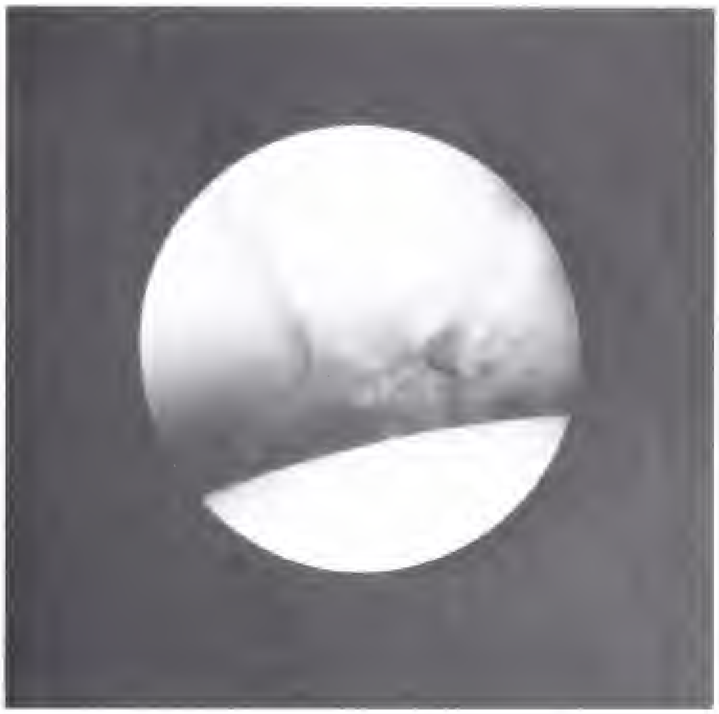
Fig. 5 - Vertical cleavage tear, medial meniscus, demonstrating suture placed intra-articularly by closed arthroscopic means. Patient doing well at 9 months following.

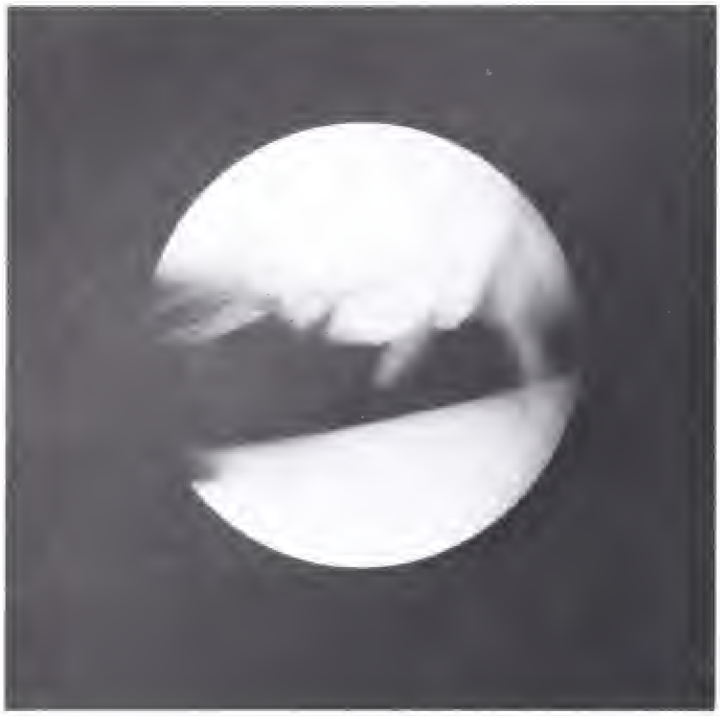

Fig. 6 · Chrondromalacia patella, as seen via the arthroscope. Patella above, femur below.

consequences. Both can be minimized by careful postoperative compression provided by a lateral compressing pad of felt or foam rubber. The procedure is done on an out-patient basis. Postoperative pain is minimized by the use of Marcaine. Crutches are not necessary. Retinacular releases can be done bilaterally safely and routinely but may require the use of crutches.

Severe chondromalacia of other areas of the knee responds temporarily to shaving and debridement. A motorized shaver is used most often. Gross patello-femoral crepitation and associated pain are usually relieved after arthroscopic shaving and lateral retinacular release. There is difference of opinion as to the precise mechanism of pain relief. Some argue that shaving is no more than irrigation and debridement, and there can be no long term benefit. Sufficient long term results are not yet available to determine whether these procedures produce lasting results. Early results are sufficiently satisfying to warrant continuing these procedures with careful evaluation.

Synovial plicae are embryologic remnants from the formation of the knee which persist into adult life (4). The medial synovial plica or "shelf" is most frequently associated with pathology. There remains controversy as to the pathologic significance of plicae. Nevertheless, many arthroscopic surgeons are convinced that plicae can and do cause symptoms significant enough to warrant their removal. Most symptomatic plicae present in teen-agers. Complaints of pain about the patella after or during strenuous activity are most frequent. Symptoms are usually relieved with rest and Aspirin, only to recur with return to activity. The severity of symptoms frequently prompts aspiring athletes to abandon their sport. Arthroscopic removal is a safe and simple solution that frequently allows return to full activity within one month. There appear to be no long-term effects. The short-term morbidity is little more than that associated with diagnostic arthroscopy.

Loose bodies, or "joint mice", lend themselves well to arthroscopic treatment. They can be removed without the need for formal arthrotomy. Similarly, foreign bodies may also be removed. Arthroscopic removal allows treatment on an out-patient basis and eliminates the need for arthrotomy.

Synovial biopsy and formal synovectomy can both be accomplished by arthoscopic means. The morbidity associated with biopsy or synovectomy in rheumatoid arthritis appears to be less than with open arthrotomy. In fact, synovectomy may be more complete by arthroscopic means than by open arthrotomy.

Hemophilia with recurrent hemarthroses has been managed arthroscopically with less morbidity than other means. Potentially laser coagulation via the arthroscope may be helpful in this problem.

Septic arthritis of the knee is frequently managed with open arthrotomy and irrigation. The principle goal is through irrigation and debridement of the knee cavity. This can be done with the arthroscope and the intra-articular shaver.

The group of problems in which the use of the arthroscope is least clear are the acute injuries of the knee. At one extreme, is the high performance athlete with a sudden discrete injury to his knee which is followed almost immediately by hemarthrosis. The probability of cruciate or meniscal injury is high. Arthroscopy will give an accurate diagnosis as well as allow early treatment. The other extreme may be represented by an elderly, relatively sedentary person, who sustains a torsional injury during a fall. Even though hemarthrosis may be present, one would probably not proceed immediately to cruciate repair

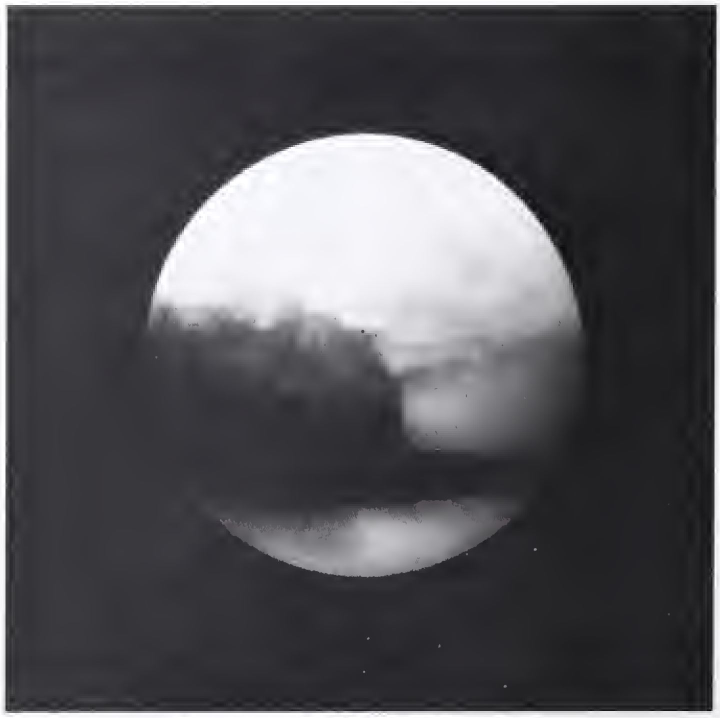

Fig. 7 · Same patient as Fig. 6. Post patellar shaving by closed arthroscopic means. Patient much improved although still not absolutely pain free.

even if it were present. Therefore, a more conservative approach and a "wait and see" attitude is justified. Should symptoms persist, arthroscopy can be done at a later date. Judgement must be utilized prior to recommending arthroscopy in the acutely injured knee.

Cruciate ligament injuries are controversial as to diagnosis and treatment. Most surgeons now repair avulsion injuries of the cruciate. Mid-substance tears do not respond well to suturing, and are therefore usually left unrepaired. Determining whether the cruciate is avulsed or torn mid-substance can be a difficult task. Nevertheless, with sufficient experience, accuracy of cruciate rupture by arthroscopic means should approach 100%. In those instances in which cruciate injury is suspected, and in which repair is contemplated if injury is discovered, the arthroscope is invaluable.

Meniscus repair, or meniscorrhapy, is possible arthroscopically. The indications are under debate. The long term results are not yet known. The technique is demanding and is not possible in all instances. Certainly the goal of retaining normal structures is admirable. Whether subsequent failure will occur in a high proportion of menisci so repaired, and will therefore negate positive aspects of the procedure remains to be seen. Capsular injuries and primary chondral lesions of the tibia, femur and patella also provoke considerable discussion as to their proper treatment. Nevertheless, the arthroscope can add clarity and accuracy in diagnosing these acute injuries of the knee. One should remember that arthroscopy in the acutely injured knee is probably the most demanding use of the arthroscope. Hemorrhage and edema can make visualization very difficult. Inexperience may lead to error in diagnosis in the acutely injured knee more frequently than in any other situation.

In summary, the arthroscope has brought considerable change to the practice of knee surgery. Morbidity is lessened. Hospital stays are elmininated or shortened. Return to work is sooner. Patient satisfaction is greater than with traditional arthrotomy. Operative times, which are initially prolonged because of surgeon inexperience, can with experience approach those of traditional arthrotomy. the supposition is that long term results in knee surgery will be improved by the use of the arthroscope. That thesis remains unproven. Arthroscopic surgery is at the very least an alternative approach to many problems previously solved with arthrotomy.

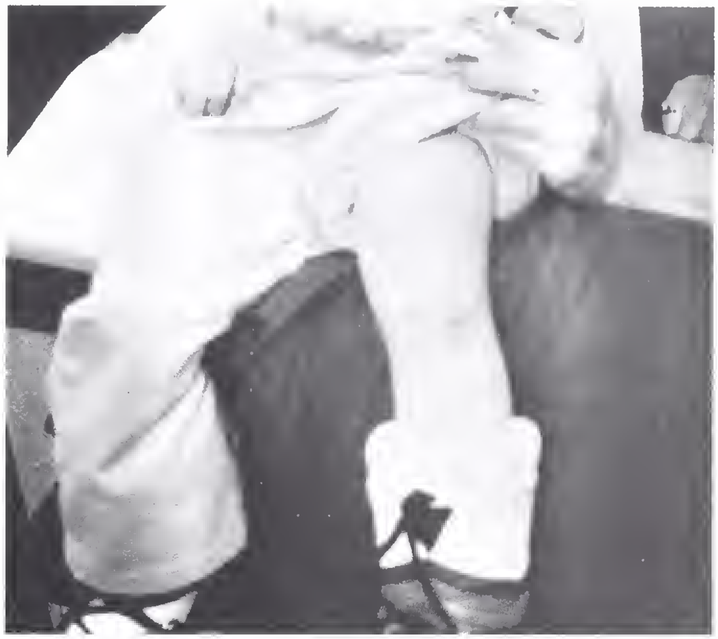

Fig. 8 - 2½-year-old female with top of sewing needle broken off intra-articularly while crawling on carpet. Removed via arthroscope. Photograph demonstrates arthroscopic portals one day post-operatively.

Fig. 9 - Same patient as in Fig. 8, walking unassisted one day post-operatively. Arthroscopic surgery was done on an out-patient basis.

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WHO'S PROGRAMME IN CIRCUMPOLAR HEALTH

Hannu Vuori, M.D., Ph.D., M.A.

The Wild West has been won, but - luckily for adventurous mankind - a new "last frontier", the circumpolar regions, has been found. Population pressures and dwindling natural resources will force man to try to extend his habitat to areas that have previously been considered unsuitable for permanent settlement or suitable only for small native populations. Therefore, the circumpolar regions will become the focus of increasing attention. They will be exposed to migration, industrial exploitation and ecological changes. For the daredevil, this may provide a welcome chance of testing his strength and stamina against extreme environmental conditions, but for the average migrant and for the native populations, the development is fraught with potential health and ecological problems. To anticipate and solve these problems, the Regional Office for Europe of the World Health Organization has decided to launch a special programme in circumpolar health.

Is a WHO programme justified?

In this era of cost-consciousness, it can perhaps be claimed that a special WHO programme in circumpolar health is a waste of resources because of the small size of the populations concerned, the nature of the health problems involved and the fact that most circumpolar areas are in rich, industrial countries. Let us examine these claims a little more closely.

In relation to WHO global activities, the population living in the real arctic (approx. 1 million) is, indeed, negligible, and even the population living in the subarctic is minuscule (approx. 20 million). It is also true that these populations live primarily in countries that are willing and able to provide them with health services. The health budgets of arctic Alaska and Canada are, in fact, among the highest in the world on a per capita basis. One should not forget, however, that most countries, including the rich, industrialized countries, are characterzed by a maldistribution of health services, which often hits hardest those population groups that are ethnically different from the majority and that live in remote and sometimes almost inaccessible areas, where the distances are long and the settlements small. These, of course, are characteristic features of arctic and subarctic areas.

One should remember that it is not the size of the population that matters. Article 25 of the **Universal Declaration of Human Rights** adopted by the United Nations General Assembly in 1948 specifically mentions a right to medical care and a right to a standard of living adequate to provide for one's health and well-being. Similarly, the preamble of the **Constitution** of WHO states that:

> "the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition"

and

> "governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures"

The most recent reaffirmation of this principle is to be found in the **Declaration of Alma-Ata,** adopted by the leading health authorities of more than 140 countries in 1978:

> "The existing gross inequality in the health status of the people, particularly between developed and developing countries, as well as within countries, is politically, socially and economically unacceptable and is, therefore, of common concern to all countries."

It is thus clear that the provision of health services to people living in circumpolar areas should not be based on any considerations concerning the prospects of finding natural resources in these areas and of exploit-

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Regional Officer for Primary Health Care Regional Office for Europe, World Health Organization. Paper presented at the 5th International Symposium on Circumpolar Health, Copenhagen, Denmark, 9-13 August 1981. Reprinted with the permission of the Editor of World Health.

ing them economically, but on the principle of the "right to health".

Besides the general principle of the right to health, the notion of vulnerable and high-risk groups, which also features in the Alma-Ata Declaration, can be evoked to justify WHO's involvement in circumpolar health. It is true that there are relatively few problems that are specific to the circumpolar areas or limited to them. Consequently, it may be unwarranted to speak of a medical specialty called arctic or circumpolar medicine, although in the past, such problems as frostbite gained great attention as examples of proper subjects of such a specialty. Even today there seems to be a "latitude bias", a tendency to think that the mere fact of residing in the extreme north or south is in itself a major health risk. The example of many migrant subpopulations engaged in mining, oil drilling and similar activities demonstrates, however, that it is possible to reach and maintain a level of somatic health fully comparable to that of people living in less extreme areas.

Nonetheless, the fact that there are few unique health problems does not mean that the circumpolar populations, particularly the natives, would not pass for vulnerable and high-risk groups which should be accorded high priority in health planning. Most health statistics covering circumpolar areas show a sombre picture: average life expectancy is shorter, and infant mortality higher than in the south, etc. In evaluating attempts to dismiss the health problems of the circumpolar areas as trivial, the fragility of the circumpolar nature and its vulnerability to obnoxious ecological influences should be remembered.

There is a third, pragmatic reason for WHO to become involved. The biggest problems related to the provision of health services relate not to any specific circumpolar pathology, but to long distances and scattered and small populations. These are problems that are shared by many other areas, such as arid regions and archipelagos. Such areas cover roughly one third of the land mass of the earth and provide habitat for quite large populations. Consequently, solutions found to the problems of service provision in the extreme north and south can be applied to benefit people living in many other parts of the world as well.

Development of WHO activities

WHO showed considerable interest in circumpolar health as early as the 1960s, organizing a Conference on Medicine and Public Health in the Arctic and Antarctic in 1962, which resulted in two publications, (1,2). Because the majority of the Member States did not consider this to be a high priority area, interest fell off for a while. However, the European Regional Office was represented at the second and third international symposiums on circumpolar health, in Oulu in 1971 and in Yellowknife in 1974, respectively, and participated actively in the preparations for the fourth and fifth symposiums. At the fourth symposium in Novosibirsk in 1978, the Regional Office for Europe's stand was described in a position paper entitled "the approach to circumpolar health" (3).

The first proposal to establish a special European regional programme on arctic medicine was made in 1975. It was suggested that this programmme should cover:

(a) the problems of nomadic populations in the arctic;
(b) the extremely difficult conditions of work;
(c) the problem of man adapting to these conditions; and
(d) the development of comprehensive health care systems to serve such populations.

It was also suggested that the Regional Office for Europe should collaborate actively with Canada and the United States in the implementation of this programme, although the Regional Office for the Americas accorded it a low priority. Gradually, because of the known interest of Canada and the United States and the possible interest of countries concerned with the antarctic, the idea emerged that the activity should be made a global programme with the Regional Office for Europe as a focal point. In 1979, in connexion with a Working Group on the Health Problems of Local and Migrant Populations in Arctic Regions (4), a special consultation was organized with American, Canadian, USSR and Scandinavian participants to define WHO's role in circumpolar health. Following the recommendations of this consultation, a full-scale medium-term programme in circumpolar health was prepared in 1980 to become effective as a global programme as of 1983, should the WHO Director-General so decide. It is expected that Canada, the United States, Denmark, Iceland, Norway, Sweden, Finland, the Soviet Union, Mongolia and possibly Argentina, Chile, Australia and New Zealand will be interested in it.

The Working Groups on Environmental Health problems in Arctic Areas and on Comparative Studies in Circumpolar Health, organized in connexion with the Fifth International Symposium on Circumpolar Health, (Copenhagen, 1981), are, in a way, first steps in the implementation of this programme, although they are still being carried out under the auspices of other European Regional programmes.

Basic premises of the programme

The programme rests on certain assumptions concerning the nature of the problems to be tackled and the obstacles to be overcome when implementing it. The assumption, the correctness of which has to be corroborated by the health authorities concerned and scientific community and community representatives, are as follows:

(1) **Target population.** There are two main population groups: the natives and the settlers. Particularly with regard to psychosocial problems, the settlers can be divided into temporary migrants (e.g. workers coming to complete a defined task of relatively short duration), first generation settlers (persons who intend to stay permanently in the circumpolar areas, but who have

lived part of their lives in non-circumpolar areas and who have their original domicile and possible relatives in such areas), and second and further generation settlers (persons born in the circumpolar areas and intending to stay there). The relative importance of these populations varies from country to country depending on their size.

(2) **Health problems.** The natives and the settlers have some problems in common and some different problems. Both groups are confronted with a new culture. As, however, the culture of the settlers is dominant, acculturation is much more serious for the natives, and is probably the main cause of their health problems. The settlers may also experience acculturation because they have been uprooted from their original culture. The natives may still carry the burden of some traditional diseases (e.g. contagious and parasitic diseases), but are also confronted with health problems related to "modernization" and industrialization (e.g. occupational injuries and diseases, "behavioural diseases", such as some types of cancer and cardiovascular diseases). Long adaptation has usually enabled them to endure the harsh climatic conditions, whereas the settlers often have both biological and psychological adaptation problems caused by the climate, darkness, lack of leisure activities, sexual deprivation, etc.

(3) **Health services.** There are few, if any, health services that are unique to the circumpolar areas. The main problem is that of long distances and small populations. The effect of cold **per se** is often exaggerated, although it may affect the ability to provide care. In this respect, there is a clear gradient from real arctic to subarctic. Particularly in the subarctic regions, the effects of climate can often be minimized by means of social and enginering measures. Again, there is a big variation between countries. Some countries with large settlements can provide the inhabitants of circumpolar areas with most customary medical services, whereas it is unfeasible to try to provide, say, small Indian and Eskimo villages in Alaska and Northern Canada with the same amount and the same technical quality of services.

(4) **Dynamic picture.** The circumpolar regions will become the focus of increasing interest. Migration will inevitably create ecological problems and problems of acculturation. Similarly, settlers attempting to live in adverse conditions will experience both biological and psychological adaptation problems, and with some countries actively encouraging migration, the number of people exposed to these problems is increasing rapidly. This may result in the population becoming more vulnerable than in the past. Earlier, the circumpolar areas were inhabited by, in many respects, "abnormal" settlers. They were often individuals with great stamina, and often of peculiar character. With the influx of new settlers, the previously male-dominated population has become more "normal", including more women and children, which is resulting in rapdily changing and more diversified health and disease panorama. With the increase in the size of the settlements and the sophistication of the technology used, the impact of the new culture and technology has reached previously unknown dimensions. One of the basic problems is that we do not have the necessary skills to predict their long-term impact.

(5) **Problems of implementation.** From the Regional Office's point of view, the biggest problem in developing and implementing the programme in circumpolar health is, perhaps, the fact that only a few Member States have circumpolar areas. Therefore support for this programme, for example in the WHO Regional Committee for Europe, is not unanimous. The countries concerned, however, consider this a problem area of great and increasing importance. The suggested global character should make the programme more viable as the number of countries actively supporting it, and participating in it, increases. The global approach should also increase the possibilities for international cooperation, both in research and in the provision of services.

WHO's mandate

The preceding justification for WHO's involvement in circumpolar health should already have made it clear that the new programme has a firm basis. Correspondingly, although there exists no direct reference to circumpolar health, the policy-making organs of WHO have indirectly mandated the Regional Office for Europe to go ahead. The World Health Assembly has urged Member States to accord priority to measures for improving the health of underserved populations (Resolution WHO29.74 of 1976). In addition, many resolutions pertaining to family health, mental health, environmental health, nutrition, communicable and noncommunicable diseases, and - particularly - primary health care, are relevant. The WHO/UNICEF International Conference on Primary Health Care (Alma-Ata, 1978) (5) affirmed the need for a balanced distribution of resources so that appropriate attention can be given to population groups that are deficient in terms of primary health care and overall development. It recommended that high priority be given to the special needs of women, children, working populations of high risks, and the underprivileged segments of society. It also recommended that all levels of health personnel be provided with incentives scaled to the relative isolation and difficulty of the conditions under which they live and work.

Content of the programme

The overall objectives of the new programme are:

(1) to reduce the prevalence and incidence of problems caused by deficient acculturation and adaptation, and by a deteriorating environment;
(2) to increase the range, number and acceptability of available services;
(3) to train more manpower (including health workers recruited from among the native populations)
(4) to encourage lay-care and self-care; and

(5) to encourage research on circumpolar health and to develop research methodology.

As in the case of all WHO programmes, it should be noted that these objectives are expected to be reached, not by the single-handed efforts of WHO, but through, and in collaboration with, Member States.

The translation of the objectives in specific activities is governed by a couple of general principles. In the past, circumpolar health was often characterized by emergency measures aimed at solving acute problems. The real problem, however, is that we do not know the scale and weight of the problems that will be caused by rapid transition in the circumpolar areas, but only that they are going to increase. Therefore, the focus of circumpolar health has to be shifted to devising new strategies for forecasting and dealing with the emerging problems and to developing new methods of assessing the impact of changes. The new strategies also imply a shift of emphasis from clinical medicine to community medicine and public health. Key concepts in such strategies will have to be the systems approach and multidisciplinarity.

These considerations have resulted in the following suggestions concerning WHO's possible role in research, health manpower development and services development.

(1) **Research**

- to act as clearing house on research pertaining to circumpolar health;
- to standardize the methodology used in studies pertaining to circumpolar health, paying special attention to the development of standard questionnaires, and to data collection and reporting periods;
- to assist the Member States in developing information systems;
- to initiate international comparative studies in circumpolar health;
- to initiate evaluative studies; and
- to foster contacts between scientists from different countries and facilitate communication within the scientific community.

(2) **Health manpower development**

- to promote integrated service and educational planning;
- to assist Member States in the production of learning material suitable for self-care;
- to assist Member States in the production of educational material to be used in the training of health professionals; and
- to assist Member States in performing task analyses concerning the functions of various categories of health personnel.

(3) **Health service development**

- to develop models for various mixes of health personnel and social services manpower;
- to experiment with other components of the service delivery system (e.g. communication, technology, transportation, self-care); and
- to develop models and standards for appropriate health care technology.

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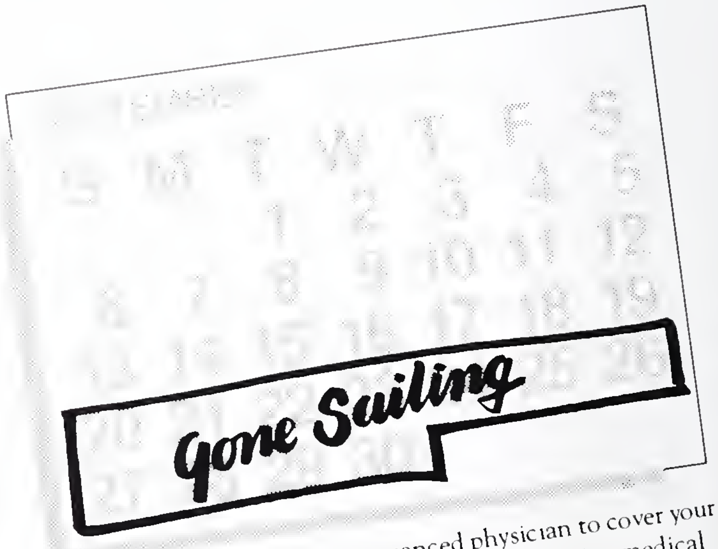

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"The grand principle is that human life was not intended to be extinquished at its very dawn . . . "
Andrew Combe, 1845

In 1981 we reported on the improving outlook of sick neonates in Alaska with the advent of tertiary level neonatal intensive care (1). This manuscript represents a continuing effort to examine issues relating to perinatal care in Alaska. It presents an analysis of recent neonatal mortality with an emphasis on identifying potential sources of its reduction.

Methods

Data on U.S., Alaska, rural and urban Alaskan, native and non-native Alaskan neonatal mortality were obtained from the following sources: (1) annual or monthly summaries from **Vital Statistics of the United States** published by the National Center for Health Statistics, U.S. Department of Health, Education and Welfare. (2) **Perinatal Mortality: Alaska, 1973-1977**, published by the State of Alaska, Department of Health and Social Services, Office of Information Systems, 1978. (3) **Alaska Vital Statistics Annual Report** 1978 and 1979, published by the State of Alaska, Department of Health and Social Services, Office of Information Systems. (4) Unpublished data obtained directly from the State of Alaska, Office of Information Systems. Low birthweight rates and birthweight-specific mortality rates were calculated from raw data supplied by the State of Alaska, Office of Information Systems and paired birth/death certificates obtained from the State of Alaska, Department of Health and Social Services.

Statistical comparisons were preformed for data for 1980 using the chi square analysis with or without the Yates' correction as appropriate (2).

Results

Table I compares neonatal mortality for the United States and Alaska for 1971-1980. There has been a decline in neonatal mortality for both the United States and Alaska. Most of the decline for Alaska has occurred with major decreases in mortality in 1975 and again in 1980. The mortality rate in 1980 of 6.4 per 1,000 live births is the lowest rate achieved in the state.

TABLE I

NEONATAL MORTALITY RATES* FOR
THE UNITED STATES AND ALASKA: 1971-1980

YEAR	U.S.	ALASKA
1971	14.7	12.9
1972	13.6	11.0
1973	13.0	13.6
1974	12.3	12.2
1975	11.6	9.4
1976	10.9	8.9
1977	9.9	8.5
1978	9.4	9.6
1979	8.7	9.9
1980	8.4	6.4

*per 1000 live births

Table II compares urban and rural neonatal mortality for Alaska for 1971-1980 defined by areas of mother's residence. Urban areas were defined as the immediate Anchorage and Fairbanks census divisions. All other areas of the state were defined as rural. The principal reason for this definition was to separate areas accord-

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Clinical Director, Alaska Newborn Care Project and Newborn Special Care Nursery, Providence Hospital.

ing to accessibility to neonatal intensive care. Consistently lower mortality rates for the urban population have been apparent since 1975. Urban mortality for 1980 was significantly lower (p 0.05) than rural mortality.

TABLE II

URBAN AND RURAL NEONATAL MORTALITY
RATES FOR ALASKA: 1971-1980

YEAR	URBAN	RURAL*
1971	12.0	14.3
1972	12.3	8.6
1973	13.6	13.7
1974	12.5	11.8
1975	8.1	11.3
1976	8.2	10.2
1977	8.2	8.9
1978	9.3	10.1
1979	9.4	10.5
1980	4.9**	8.5**

* see text for definitions

** $p<0.05$

Table III compares native and non-native neonatal mortality rates for Alaska. With the exception of 1977 and 1978, which were characterized by a high rate, there has been little improvement in mortality during the 1970's for Alaska natives. This contrasts with the steady decline for non-native population. The native neonatal mortality rate for 1980 is significantly higher (p 0.01) than for non-natives.

TABLE III

NATIVE AND NON-NATIVE NEONATAL MORTALITY
RATES FOR ALASKA: 1971-1980

YEAR	NATIVE	NON-NATIVE
1971	12.2	13.1
1972	11.3	10.8
1973	13.9	11.8
1974	19.2	9.3
1975	10.8	7.0
1976	13.5	5.9
1977	7.2	7.2
1978	8.4	9.9
1979	13.6	8.8
1980	11.8*	5.1*

* $p<0.01$

Table IV compares mortality rate by race and geographic area (urban vs. rural). Mortality rates are uniformly low except for the native rural population. Since low birthweight rates are a significant contributor to neonatal mortality (3-10) it is important to look at racial and geographic differences in low birthweight rates. Low birthweight (less than 2500 grams) rates for 1980 are shown in Table V. The highest rate (7.8%) is for the native urban population and the lowest (4.9%) for the non-native rural population. Therefore, the high mortality for the native rural population cannot be credited to a high low birthweight rate.

TABLE IV

NEONATAL MORTALITY FOR ALASKA
BY RACE AND GEOGRAPHIC AREA: 1980

	NATIVE	NON-NATIVE
URBAN	5.3	4.8
RURAL	12.6*	5.9

* difference compared to other groups:

native urban (p=NS)
non-native urban ($p<0.01$)
non-native rural ($p<0.05$)

TABLE V

LOW BIRTHWEIGHT RATES FOR ALASKA
BY RACE AND GEOGRAPHIC AREA: 1980

	NATIVE	NON-NATIVE
URBAN	7.8%*	5.0%
RURAL	5.7%	4.9%

* difference compared to other groups:

native rural (p=NS)
non-native urban ($p<0.01$)
non-native rural ($p<0.01$)

Tables VI and VII compare birthweight-specific mortality rates for native and non-native populations for 1980. In Table VII neonatal deaths associated with certain lethal congenital anomalies were excluded from the analysis. In addition, conditions associated with a poor prognosis, although not necessarily lethal, were also excluded. These conditions were as follows: cystic adenomatoid malformation of the lung, asphyxiating thoracic dystrophy, Potter's anomalad, trisomy 13 and 18, diaphragmatic hernia, encephalocele and sudden infant death syndrome (SIDS).

TABLE VI

BIRTHWEIGHT- SPECIFIC NEONATAL MORTALITY
FOR NATIVE AND NON-NATIVE BIRTHS; 1980

BIRTHWEIGHT (grams)	NATIVE	NON-NATIVE
500-749	3/3(100%)	14/16(88%)
750-999	2/3(67%)	3/7(43%)
1000-1499	8/14(57%)	7/25(28%)
1500-1999	4/24(17%)	2/66(3%)
2000-2499	1/91(1.1%)	6/250(2.4%)
≥ 2500	5/1992(0.25%)	6/6915(0.09%)

TABLE VII

BIRTHWEIGHT-SPECIFIC NEONATAL MORTALITY FOR NATIVE AND
NON-NATIVE BIRTHS EXCLUDING LETHAL CONGENITAL ANOMALIES;
1980

BIRTHWEIGHT(GRAMS)	NATIVE	NON-NATIVE
500-749	3/3 (100%)	13/15 (87%)
750-999	2/3 (67%)	2/6 (33%)
1000-1499	8/14 (57%)	4/22 (18%)
1500-1999	3/23 (13%)	0/64 (0%)
2000-2499	1/91 (1.1%)	1/245 (0.4%)
≥ 2500	3/1804 (0.17%)	5/7155 (0.07%)

Discussion

The neonatal mortality for Alaska in the 1970's has compared favorably to the U.S. despite problems of health care delivery related to a widely dispersed population. The major decline in mortality in Alaska in the last decade has been accomplished in the years 1975 and 1980 (Table I). Preliminary data indicates that the decline in 1980 will continue in 1981, emphasizing that the decline is real rather than an artifact relating to the relatively small number of annual births and deaths in Alaska. The reason for the sudden decline in mortality in 1975 is not known. Since the decline in 1980 is associated with a decrease in birthweight-specific mortality (11) there is good reason to believe that it is due to the greater accessibility and use of neonatal intensive care (9,10,12-14).

Despite the improvement in neonatal mortality the experience in other industrialized nations suggest that further decreases are possible. This study was undertaken in an attempt to identify factors that contribute excessively to neonatal mortality in Alaska so that efforts at further reduction can be directed toward specific groups or areas.

Analysis of Tables II, III and IV demonstrates that native births of mothers residing in rural areas contribute a disproportionate number of neonatal deaths. This group is primarily responsible for the increased neonatal mortality in the rural and native populations. There are several possibilities for the difference. Neonatal mortality is associated with two factors: the birthweight distribution (low birthweight rate) and the mortality at each birthweight (birthweight-specific mortality). The advantage of looking at neonatal mortality in this manner is multiple factors that affect mortality can be summarized in a single variable. For example, birthweight distribution is known to be affected by maternal age, race, parity, income level, education, occupation and other socioeconomic and demographic variables (6,7,15-19). Table V demonstrates that differences in birthweight distribution cannot account for the high neonatal mortality for the native rural population. Birthweight-specific mortality is thought to reflect the efficacy of medical care of the perinatal patient. Thus, a definite link between the intensity of the medical technology and improved perinatal outcome has been identified. Factors such as neonatal intensive care (8,10,12-14), increased rate of cesarean section (10), specialization and centralization of the obstetric and neonatal care (20) have been identified as factors contributing to a decrease in birthweight-specific mortality. Except for birthweights 2000-2499 grams mortality was higher for the native population for all birthweight categories (Table VI). Although numbers are too small to analyze for each birthweight category, differences are significant for all birthweight groups combined ($p<0.01$), all infants 1500 grams ($p<0.05$), and all low birthweight infants excluding those $<$ 750 grams ($p<0.05$).

MacFarlane et al (21) have suggested that birthweight-specific mortality rate can be refined to reflect the quality of care more closely by excluding congenital anomalies. Since the emphasis of this study is on identifying preventable sources of neonatal mortality, lethal congenital anomalies were also excluded from birthweight-specific mortality (Table VII), which accentuated differences between native and non-native groups. Differences between groups were significant for all birthweight groups combined ($p < 0.01$), all infants $<$ 1500 grams ($p<0.02$), all low birthweight infants excluding those $<$ 750 grams ($p<0.01$), and very low birthweight infants between 750 and 1499 grams ($p<0.01$).

Another factor unique to Alaska that may affect birthweight-specific neonatal mortality is accessibility to hospital-based perinatal care. A significant portion of the rural population, especially native, resides in small villages that do not have immediate or direct access to a hospital. Unexpected premature or term births may occur in the village which has extremely limited capability for even minimal support for sick neonates. Detailed analysis of neonatal deaths for 1980 indicated only two village births, one native and one non-native, both of whom died prior to being transported. Thus, access to hospital-based perinatal care was not a problem for the rural population. Further analysis of low birthweight deaths indicated that major differences exist in accessibility to tertiary rather than primary level perinatal care. Fifty-seven percent (13/23) of native deaths occurred outside the neonatal intensive care setting compared with 24% (9/38) of non-native deaths. In addition, no low birthweight native (0/18) deaths were born in tertiary level perinatal center compared to 66% (21/32) such deaths for the non-native population.

There is general agreement that in order to make a further reduction in neonatal mortality in the U.S. there needs to be a decrease in the number of low birthweight infants. Unfortunately, little is understood about the causes and remedies for low birthweight in industrialized societies. Attempts at decreasing the number of low birthweight infants by interventions such as nutritional supplementation during pregnancy have been unsuccessful (22). A possible explanation for the relatively low low birthweight rate among Alaska natives as compared to other minority groups such as blacks is suggested by the finding that low birthweight rates are lower in a prepaid group practice type of health maintenance organizations (23-25). The care provided by the U.S. Public Health Service to Alaska natives may be comparable in certain aspects of health care delivery philosophy to a prepaid health care system.

Data presented in this study indicates that comparable neonatal mortality rates for both native and non-native segments of the population can be achieved by improvements in hospital-based perinatal care and increased use of tertiary care perinatal services.

There are several approaches to the problems outlined in this manuscript. First, a vigorous program to upgrade both primary and secondary perinatal services offered to the native population is needed. The recommendation is not synonymous with upgrading services at USPHS hospitals since a significant number of neonatal deaths in 1980 occurred in non-USPHS hospitals. This is consistent with the fact that a portion of the native population obtains hospital-based perinatal care outside of a USPHS facility. Second, there should be **early and direct** access to tertiary care for the high-risk perinatal patient, especially those presenting with a threatened premature birth. This will require an increased awareness of the high-risk group among all perinatal health care providers. It will also require a liberalization of presently held concepts of regionalization of perinatal care.

It is important to recognize that a present there are several barriers to regionalization of perinatal care in Alaska that have implications beyond that of the native rural population. First, there are several independent health care systems (USPHS, military) that serve a large portion of Alaska's population. These systems are served by regional referral centers that do not fit nationally recognized guidelines for regionalization of perinatal care (26). It is not unusual, for example, for a high-risk mother or newborn to undergo two transports, one from a peripheral hospital to a service-specific referral center and then subsequently to a teritary care center. Such a practice invariably results in delays in appropriate care and contributes to increased mortality and morbidity. Second, the high cost of emergency medical air evacuation in Alaska places all rural medical practitioners in an extremely difficult position when faced with a high-risk maternal or neonatal patient. The frequent loser in such a transaction is the fetus or recently-born neonate who has not "proved" his/her capability to survive. Finally, mortality data for both 1980 and 1981 indicates that despite efforts at regionalization both native and non-native critically-ill neonates continue to be cared for without the benefit of a tertiary care center. This emphasizes the fact that the full potential for reduction in perinatal mortality through the use of regionalization has not been achieved.

If there is to be a systematic approach to regionalization of perinatal health care and a continued reduction in neonatal mortality the barriers need to be overcome. The most effective way for achieving it is in a manner similar to states such as California that have been leaders in decreasing perinatal mortality. A major way in which it has been accomplished is by providing equal access for all to tertiary level perinatal care by underwriting the cost of certain high-risk perinatal services under the state Handicapped Childrens Program. If such a program is to be successful in Alaska it would need to address the issue of transport cost for high-risk perinatal patient.

Such programs have been highly successful elsewhere (27) because they represent an investment in prevention of birth-related chronic handicap. When viewed in this manner the cost of such programs will compare favorably to the lifetime cost of caring for a child with severe birth-related disability.

The author expresses gratitude to David Spence, M.D., Dwane Peeples and the Office of Information Systems, State of Alaska for access to birth and death data, and to Ms. Jill Beverlin and Sharon A. Lee for statistical and secretarial assistance.

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1982 ASMA RESOLUTIONS

PRESENTED BY THE ALASKA STATE MEDICAL ASSOCIATION HOUSE OF DELEGATES AT ITS ANNUAL MEETING IN FAIRBANKS, ALASKA JUNE 8, 1982.

RESOLUTION NO. 82-1 · FAILED
SUBJECT: Professional Expertise
WHEREAS, medical organizations frequently offer professional public opinions about complex controversial social and political issues, and

WHEREAS, the prestige of the profession is meant to lend weight to such pronouncements; and

WHEREAS, the membership of the organizations may have no special expertise, beyond that of the educated public, in the technical aspects of such issues; and

WHEREAS, in any event such opinions are seldom unanimous, or even necessarily reflect the sentiments of a large majority of the membership; therefore

BE IT RESOLVED, that the Alaska State Medical Association, as an organization, make no public statements or opinions relating to controversial problems where the ASMA membership has no special professional expertise.

RESOLUTION NO. 82-2 · FAILED
SUBJECT: Oppose Petrochemical Development in Alaska
WHEREAS, the human, biological, and ecological hazards, risks, and comprehensive and authoritative data related to the petrochemical processing plants which are known, are great, and those that are unknown are probably vastly greater; and

WHEREAS, since scientists cannot presently predict all the acute, chronic, or genetic effect on humans, animals, or plants related to the petrochemical industry; and

WHEREAS, medicine cannot prevent, cure, nor palliate all of the possible deleterious effect of the petrochemical industry, for example, cancer from occupational carcinogens; and

WHEREAS, laws cannot be made to properly regulate the unpredictable and highly dangerous epidemiological and ecological effects of the petrochemical industry in the future, nor can any such laws provide for the repair or the restitution of Alaskan eco-logical or human damage in the future; and

WHEREAS, Alaska has a delicate and fragile biological ecosystem typical of the arctic and subarctic regions; and

WHEREAS, there is no economic, social, or defense need to bring any additional petrochemical industry plants to Alaska; therefore

BE IT RESOLVED, that the Alaska State Medical Association hereby opposes any further addition of petrochemical plants or other facilities that increase the hazard to the present or future status of the State of Alaska, it's lands, Alaskan residents, the entire ecosystem, or any surrounding region which might involve other areas in the world.

RESOLUTION NO. 82-3 · ADOPTED
SUBJECT: Petrochemical Development
WHEREAS, based on currently available information, many petrochemical substances are known to cause significant toxic effects, including the development of cancer, sterility, and genetic defects; and

WHEREAS, major expansion of the petrochemical industry has been proposed for Alaska; and

WHEREAS, Dr. John Middaugh's reports * have analyzed the question of further petrochemical development in a thorough and unbiased fashion, therefore be it

RESOLVED, that the Alaska State Medical Association endorses Dr. John Middaugh's reports and conclusions, and

BE IT FURTHER RESOLVED, that the Alaska State Medical Association supports development with appropriate health, environmental safety standards and safeguards prior to further petrochemical development in Alaska.

* 1. Health Hazard and Risk Assessment of the Dow-Shell Group Proposed Petrochemical Industry. September 9, 1981
2. Health Hazard and Risk Assessment of the Dow Group Proposed Petrochemical Industry. Review of the Dow-Shell Economic Feasibility Study. October 9, 1981

RESOLUTION NO. 82-4 · ADOPTED
SUBJECT: Distinguished Service Award
WHEREAS, John J. Kottra, M.D. has performed outstanding service for ten years as editor of the Alaska State Medical Association Journal;
BE IT THEREFORE RESOLVED, that the Alaska State

Medical Association hereby gives him appropriate recognition for his service with a gold pan distinguished service award inscribed thusly:

Distinguished Service Award
to
John J. Kottra, M.D.
Editor, ALASKA MEDICINE
Alaska State Medical Association Journal
1972 to 1982

RESOLUTION NO. 82-5 - ADOPTED
SUBJECT: Councilor Reimbursement
WHEREAS, Council meetings serve as the most direct means of communicating the concerns and interests of the members of the Alaska State Medical Association between Annual Meetings; and

WHEREAS, component societies of ASMA are of various sizes and are scattered throughout the State; and

WHEREAS, Council Meetings best serve their purpose when there is representation from all component societies at each Council Meeting; therefore

BE IT RESOLVED, that ASMA pays roundtrip economy airfare and itemized expenses not to exceed $125/day for a minimum of one Councilor from each component society and for the Councilor-at-Large for all Council Meetings held at times other than those meetings held in conjunction with the ASMA Annual Meeting.

RESOLUTION NO. 82-6 - ADOPTED
SUBJECT: Support of limited access of alcohol to control alcohol related injuries.
WHEREAS, it is well established that alcohol abuse is most commonly related to injury and death from abuse, violence, and automobile accidents in Alaska; and

WHEREAS, limiting access to alcohol by community action has been shown to reduce alcohol related injuries and death; therefore

BE IT RESOLVED, that the Alaska State Medical Association supports limited access to alcohol through diminished hours of distribution, and supports the local community in addressing the various levels of limiting access.

RESOLUTION NO. 82-7 - ADOPTED
SUBJECT: Alcohol and Tobacco Tax Exemption
WHEREAS, overuse of beverage alcohol causes more preventable illness and injury in Alaska than any other single factor; and

WHEREAS, cigarette smoking causes preventable llness and contributes significantly to heart disease, cancer and respiratory disease; and

WHEREAS, the consequences of personal use of alcohol and cigarettes are borne by the society at large both in increased injury and illness and in increased expense through risk sharing; and

WHEREAS, there is no demonstrable advantage to society to have new users of alcohol and cigarettes recruited from the adolescent and adult population through advertising and promotional activity; and

WHEREAS, directly prohibiting advertising and promotional activities is both an infringement of freedom of speech and an exercise of bureaucratic intrusion; therefore

BE IT RESOLVED, that ASMA opposes granting tax exemption for any advertising or promotional activity for any alcohol and tobacco product; and

BE IT FURTHER RESOLVED, that ASMA encourages and commends advertising and education activities urging abstinence or moderation in use of alcohol and tobacco.

RESOLUTION NO. 82-8 - ADOPTED
SUBJECT: Support efforts to enable non-beneficiaries living in native communities to have greater access to care locally.
WHEREAS, mechanisms for collecting third party payments from native and non-natives in bush Native Hospitals is deficient due to legal and administrative constraints; and

WHEREAS, Native Hospitals still remain closed to private practitioners for private practice thereby limiting access to care,

BE IT RESOLVED, by the Alaska State Medical Association that it supports efforts to both secure and provide adequate funding for Alaska Natives Health Service non-beneficiaries living in native communities; and

BE IT FURTHER RESOLVED, that ASMA supports efforts to permit private physicians to practice in Native Hospitals to provide care to non-natives.

RESOLUTION NO. 82-9 - ADOPTED
SUBJECT: Utilization of Private Resources
WHEREAS, Alaska is a State with opportunities, problems and resources unequaled by any of the smaller states; and

WHEREAS, medical care and health services in Alaska are well described as full of opportunities, problems and resources by virtue of our geography, population spread and variety of private, local, state and federal efforts; and

WHEREAS, many Alaskans are assuming new roles and responsibilities through the continuing growth of Native Corporations, Regional Health Corporations, Community Emergency Medical Technician Programs, Local Health Councils and other Alaskan Institutions; and

WHEREAS, continued fluctuations in the economy, in both private and government third party payment mechanisms, and in federal health programs are encouraging changes in patterns of health care

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J-9043-4 July 1981

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Feeling well rested in the morning usually means having slept well the night before. And for insomniac patients receiving hypnotic therapy, a good morning also means awakening with few side effects from their medication. Many physicians choose Dalmane for their patients who suffer from insomnia for this very reason.

Aside from enabling patients to fall asleep more quickly and sleep longer, Dalmane seldom causes morning hangover. Most Dalmane patients feel alert and refreshed when they awaken. In 53 paired-night clinical studies comparing Dalmane and placebo in 2010 insomniac patients with a variety of secondary diagnoses, most Dalmane patients awakened more alert and refreshed, and less groggy and drowsy, than on nights when they had taken only placebo.[1] In a double-blind crossover study of 42 patients in private practice, approximately three times as many patients reported feeling refreshed and alert upon awakening after a night on Dalmane (flurazepam/Roche) compared to placebo nights.[2] This difference was highly significant ($p<0.001$). And a retrospective study of 2542 hospitalized patients who received Dalmane revealed only a 3.1% incidence of side effects.[3]

While residual effects from Dalmane therapy are infrequent, patients should be cautioned about drinking alcohol, driving or operating hazardous machinery after ingesting the drug.

Efficacy and safety in a broad range of patient types.

Over 2000 clinical trials involving more than 10,000 patients have shown that Dalmane patients fall asleep sooner, sleep longer and experience fewer nocturnal awakenings.[4] The safety and efficacy of Dalmane have been demonstrated in medical and surgical hospitalized patients, in patients seen in office practice and in elderly patients.[5-8] Since the risk of oversedation, dizziness, confu-

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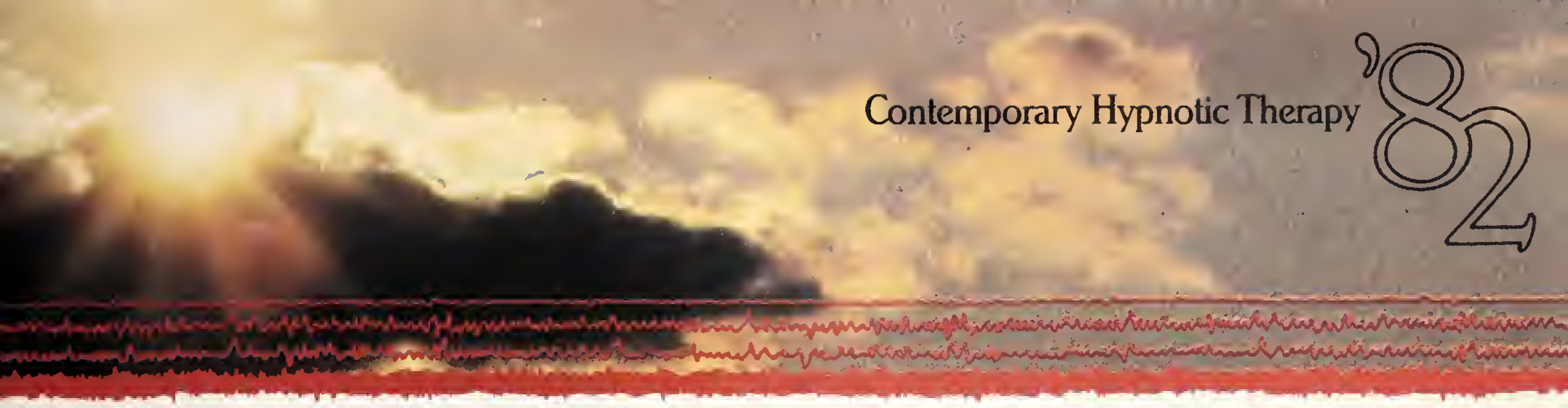

sion and/or ataxia increases with larger doses in the elderly, it is recommended that the dosage be limited to 15 mg.

Moreover, the efficacy and safety of Dalmane for the treatment of insomnia have been demonstrated in thousands of patients with a variety of primary medical conditions, including cardiovascular, neuropsychiatric, endocrine-metabolic, gastrointestinal, genitourinary, respiratory and musculoskeletal disorders.[1] Dalmane (flurazepam HCl/Roche) is contraindicated in pregnancy and in patients hypersensitive to the drug.

Avoids rebound insomnia upon discontinuation.

Rebound insomnia—a worsening of sleep beyond pretherapy levels after drug discontinuation—has been reported as a potential clinical problem with some hypnotics.[9,10] However, this problem has not been reported with Dalmane. In eight out of eight sleep laboratory studies, there were no reports of rebound insomnia.[11] When you prescribe Dalmane, you can be confident of efficacy that enhances therapeutic progress. Your insomniac patients can be assured of a restful night, night after night—a good start for a good morning.

References: **1.** Data on file, Hoffmann-La Roche Inc., Nutley, NJ. **2.** Zimmerman AM: *Curr Ther Res 13*:18-22, Jan 1971. **3.** Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther 21*:355-361, Mar 1977. **4.** Data on file, Hoffmann-La Roche Inc., Nutley, NJ. **5.** Meyer JA, Kurland KZ: *Milit Med 138*:471-474, Aug 1973. **6.** Feffer HL, Gibbons B: *Med Times 101*(8):130-135, Aug 1973. **7.** Jacobson A *et al*: *Psychophysiology 7*:345, Sep 1970. **8.** Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc 27*:541-546, Dec 1979. **9.** Kales A, Scharf MB, Kales JD: *Science 201*:1039-1041, Sep 1978. **10.** Kales A *et al*: *JAMA 241*:1692-1695, Apr 1979. **11.** Monti JM: *Methods Find Exp Clin Pharmacol 3*(5):303-326, 1981.

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Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patient to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg recommended initially until response is determined.

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delivery; and

WHEREAS, the Alaskan medical community, with physicians in private practice and a State and Federal Service, is in a unique position to provide both advice and medical care throughout the state; therefore

BE IT RESOLVED, that ASMA formally declares its willingness to work with private, State and Federal organizations to provide the best possible medical care to Alaskans, within constraints of geography and community need, through a maximum utilization of private resources.

RESOLUTION NO. 82-10 - ADOPTED
SUBJECT: Medicaid Reimbursement
RESOLVED, that in order to facilitate access of Medicaid patients to mainstream medical care, we support the concept of prompt and complete payment of physician charges, with minimum red tape and with no invasion of patient privacy.

RESOLUTION NO. 82-11 - ADOPTED
SUBJECT: Health Care Professional Certification Statement (contractual agreement)
WHEREAS, the Health Care Professional Certification Statement that proposed that the Alaska Division of Public Assistance presumes physician dishonesty and guilt, provides for invasion of privacy and destruction of professional confidentiality, and is a waiver of constitutional protection from unwarranted search and seizure; and

WHEREAS, excessive disincentives for physician participation in the Medicaid Program currently exist; and

WHEREAS, unnecessary physician alienation from the program attributable solely to the statement, would further limit access of the Medicaid recipients to the Health Care System; and

WHEREAS, the conditions of the statement are, for the reasons cited, egregious; therefore

BE IT RESOLVED, that in order to provide more equitable access to medical care in Alaska, the Division of Public Assistance should remove the objectionable conditions from the Medicaid Health Care Professional Certification Statement.

RESOLUTION NO. 82-12 - ADOPTED
SUBJECT: Better Birthing Outcome
WHEREAS, it appears that certain persons desire an alternative to traditional hospital obstetric practices; and

WHEREAS, alternative birthing centers are now in place around the State of Alaska in physical proximity to acute care medical facilities; and

WHEREAS, obstetric emergencies can arise on very short notice affecting both mother and child during childbirth; and

WHEREAS, immediate specialty medical care can favorably improve the outcome of many of the emergencies; and

WHEREAS, recognizing the above facts few if any qualified professionals are likely to enter into a collaborative agreement with a lay midwife to perform home deliveries; and

WHEREAS, licensing of partially trained persons is unlikely to improve the safety of home deliveries under their supervision; and

WHEREAS, a license from the State of Alaska may increase the public confidence in a potentially dangerous practice; therefore

BE IT RESOLVED, that the Alaska State Medical Association is against the formal licensure of lay midwives; and furthermore will provide information to the citizens of the State of the risks involved to both mother and child when chosing the birthing alternative of lay midwives and home delivery.

RESOLUTION NO. 82-13 - ADOPTED
SUBJECT: The Conduct of Dying
WHEREAS, the conduct of dying is a difficult, solemn, and delicate matter which involves primarily a patient and his physician, and secondarily loved ones, nurses, clergymen, attorneys and others; and

WHEREAS, the rational desires of a patient are paramount and are regularly honored by those who attend him; and

WHEREAS, precisely what to do medically and when to do it should not and cannot be codified; and

WHEREAS, it is meddlesome and unnecessary to have the intrusion of mischeivous legal guidelines into matters which have since time immemorial been handled satisfactorily by people; therefore

BE IT RESOLVED, that the Alaska State Medical Association is totally opposed to legislation about the conduct of dying, particularly so-called "living will" bills.

RESOLUTION NO. 82-14 - ADOPTED
SUBJECT: Attack of Alaska Right to Life Organization
WHEREAS, the Alaska State Medical Association recognizes Carolyn Brown, M.D., of Palmer, Alaska as a skillful physician with singular dedication to public service; and

WHEREAS, Dr. Brown has lived in Alaska since 1965 except for egress for two years for preventive medicine training and three years for obstetrics-gynecology residency. She served with distinction for six years in the United States Public Health Service in Anchorage. She helped establish the Poison Control Center at Providence Hospital on a permanent basis to serve the entire state. She was an originator of the Open Door Clinic and was the second physician to work at the Neighborhood Health Center. She assisted the Anchorage School District and the Borough of Anchorage with their preventative medicine programs. For a time she ran a methadone clinic for the State; and

WHEREAS, in 1978 Dr. Brown established practice in Palmer. She brought the first specialty care in obstetrics and gynecology to the Matanuska Valley. Her tireless devotion, compassion, and generosity to her patients is in the finest tradition of medical practice.

WHEREAS, Dr. Brown has been an energetic member of the Anchorage Medical Society, and Alaska State Medical Society, and the American Medical Association. When she moved to the Valley she and others founded the Matanuska-Susitna Medical Society. Dr. Brown once served as chairman of the Alaska State Medical Association legislative committee and was widely admired in Juneau for her intelligence, fairness, and persistence. She has worked diligently for many years for sensible, effective public health measures. In 1972 she received the A.H. Robins Award for Community Service.

WHEREAS, the Alaska Right to Life organization disagrees with Dr. Brown's attitude about abortion. It has mounted a vicious and disruptive attack upon her.

RESOLVED, that the Alaska State Medical Association deplores the tactics of the attack of the Alaska Right to Life organization upon Dr. Carolyn Brown of Palmer, Alaska, and other Alaskan physicians who have been similarly attacked.

RESOLUTION NO. 82-15 · ADOPTED
SUBJECT: Medicaid and Medicare Fees
WHEREAS, physicians are providing medical care for the indigent through Medicaid and Medicare programs at less than market value; and

WHEREAS, State and Federal governments are faced with high costs and potential deficits; and

WHEREAS, the political climate favors greater individual and private rather than governmental solutions to social problems; and

WHEREAS, we, as physicians, are concerned with the welfare of all patient care and find it disconcerting that Medicaid and Medicare patients may have difficulty finding medical care; and

THEREFORE BE IT RESOLVED, that the physician providing medical care for patients under the Medicaid or Medicare programs be permitted to deduct as a charitable contribution from corporate or personal income tax that portion of his services not covered by the above programs, or to deduct the total of his rightful fee as a charitable contribution and not bill Medicaid or Medicare for his service.

RESOLUTION NO. 82-16 · ADOPTED
SUBJECT: Thanking the Speakers
WHEREAS, this meeting is made much more worthwhile by the time and efforts of the speakers and their contribution to this scientific enterprise, and

WHEREAS, the Alaska medical delegation has enjoyed and appreciated the presentations of each; now therefore

BE IT RESOLVED, that the Alaska State Medical Association express their heartfelt thanks to the speakers who have made this convention a success.

RESOLUTION NO. 82-17 · ADOPTED
SUBJECT: Thanking the Exhibitors and Contributors
WHEREAS, the support of the drug companies and manufacturers of medical equipment and surgical supplies is appreciated; and

WHEREAS, without their support the Convention would hardly be possible; and

WHEREAS, much knowledge is gained by their presentation, now therefore

BE IT RESOLVED, that the Alaska State Medical Association thank these companies and especially their representatives for their gracious assistance and for making our meeting a successful one.

RESOLUTION NO. 82-18 · ADOPTED
SUBJECT: Thanking the Management and Staff of the Captain Bartlett Inn and Chena Hot Springs Resort.
WHEREAS, the accomodations and environment of this convention have been excellent and most enjoyable, now therefore

BE IT RESOLVED, that we express our appreciation to the management and staff of Chena and the Bartlett for their assistance in making this a very memorable and successful meeting.

RESOLUTION NO. 82-19 · ADOPTED
SUBJECT: ASMA Convention Committee
WHEREAS, the auxiliary, specifically Gail Thieman, Linda Christiansen, and Marge Muzzall, and the physicians of the Convention Committee, Richard Parry, Ron Tinsley and Co-Chairman Ron Christensen, David Johnson and Charles Sternhagen, have given so generously of their time and efforts; and

WHEREAS, the convention has been an outstanding success because of their efforts, now therefore

BE IT RESOLVED, that they be given commendation for their outstanding work and efforts to make this convention a success.

RESOLUTION NO. 82-20 · ADOPTED
SUBJECT: Honorary Membership
WHEREAS, Martha Kowalski, M.D., John Weston, M.D. and Abram Cannon, M.D. have recently retired from the practice of medicine in Fairbanks after a long and valued period of service to the community; and

WHEREAS, they have been granted dues exempt status in the Fairbanks Medical Association; therefore

BE IT RESOLVED, that Martha Kowalski, M.D., Jon Weston, M.D. and Abram Cannon, M.D. be granted honorary membership in the Alaska State Medical Association.

RESOLUTION NO. 82-21 - ADOPTED
SUBJECT: Honorary Membership for Arthur N. Wilson, Sr., M.D.
WHEREAS, Arthur N. Wilson, Sr., M.D. has practiced medicine in Alaska for nearly half a century; and

WHEREAS, he remains an active participant in the Ketchikan Medical Society and an active member of the Ketchikan General Hospital even though he is retired from clinical practice, and

WHEREAS, he continues to inspire by example with inquisitive mind, gracious demeanor and calm spirit; therefore

BE IT RESOLVED, that the Alaska State Medical Association confer honorary membership on Arthur N. Wilson, Sr., M.D. of Ketchikan.

RESOLUTION NO. 82-22 - ADOPTED
SUBJECT: Department of Health
WHEREAS, government programs promoting health and social welfare are widely divergent in emphasis and in the use of resources; and

WHEREAS, health related government activities have expanded far beyond basic public health services; and

WHEREAS, the complexities of health care require awareness and expertise from responsible government officials that is often lacking in departments where large social welfare budgets and staff dominate smaller health budgets and staff; therefore

BE IT RESOLVED, that the Alaska State Medical Association supports the reestablishment of a separate Department of Health in the State of Alaska with a physician as its commissioner.

RESOLUTION NO. 82-23 - ADOPTED
SUBJECT: Certificate of Need
WHEREAS, the certificate of need process has not been shown to be cost effective; and

WHEREAS, the certificate of need process has increased the cost of health care rather than reduced it, and

WHEREAS, the certificate of need process has wreaked havoc upon the orderly development of hospitals in Alaska, therefore

BE IT RESOLVED, the Alaska State Medical Association urges and encourages the Legislature to repeal the certificate of need law.

RESOLUTION NO. 82-24 - ADOPTED
SUBJECT: Free Standing Surgery Centers
WHEREAS, the Anchorage Surgery Center has shown efficient treatment of patients with costs reduced below those charged by hospitals; and

WHEREAS, this is an independent unit to provide an efficient use of the physician time; and

WHEREAS, this unit can provide a center where medical practitioners can operate without the threat to large national medical organizations eg "Providence Medical Centers" and "Humana"; therefore

BE IT RESOLVED, the Alaska State Medical Association in general supports the concept of the free standing surgery centers and specifically supports the Anchorage Surgery Center in its plans to expand into an earthquake proof building and to improve its efficiency.

RESOLUTION NO. 82-25 - ADOPTED
SUBJECT: Support of a Variety of Nursing Training and Education
WHEREAS, there is currently and most likely will continue to be a shortage of practicing nurses in Alaska and on the national level, and phasing out LPN, Associate and Diploma RN Nursing programs will enhance that shortage; and

WHEREAS, there always has and will continue to be many areas of nursing practice that do not require a baccalaureate degree, and

WHEREAS, all RN's have taken the same licensing board examination in order to enter practice and performed similar duties; and

WHEREAS, in practice, Associate Degree and Diploma program allow nurses to enter the profession adequately prepared with a shorter period of schooling; and Associate Degree nurses who wish to further their education can later obtain Baccalaureate, Masters, and/or PhD. degrees in nursing; therefore

BE IT RESOLVED, that the Alaska State Medical Association recognizes the education and clinical nursing experiences of LPN's, Associate Degree, Diploma and Baccalaureate, RN's; and

BE IT FURTHER RESOLVED, that the ASMA supports the pluralism of approaches to nursing education and encourages American nursing organizations and the Department of Nursing at the University of Alaska and the Alaska State Board of Nursing to continue educational programs that produce LPN's, Associate Degree and Diploma RN's.

RESOLUTION NO. 82-26 - ADOPTED
SUBJECT: Recognition of service to ASMA by Gwynneth Wilson
WHEREAS, Gwynneth Wilson has devoted untold hours in service to the association through editorial assistance with ALASKA MEDICINE; and

WHEREAS, she has thereby aided both author and reader alike, to the advancement of knowledge in and about Alaska, therefore

BE IT RESOLVED, that the Alaska State Medical Association notes with sincere appreciation Gwynneth Wilson's great editorial service to the physicians of Alaska and greatly regrets her retirement from the editorial staff of ALASKA MEDICINE.

RESOLUTION NO. 82-27 - ADOPTED
SUBJECT: WAMI Program

WHEREAS, only in recent years, thru the WAMI Program, has a reasonable number of students from Alaska, Montana and Idaho gained access to medical school; and

WHEREAS, there has in the past few years developed a possible excess of physicians in the United States; and

WHEREAS, there is increasing pressure for medical schools to reduce the number of medical school class positions; and

WHEREAS, Washington ranks 44th and Idaho ranks 50th in medical students/100,000 population; and

WHEREAS, it is incumbent on the Alaska State Medical Association to concern itself with the future educational opportunity of any young people; therefore

BE IT RESOLVED, the Alaska State Medical Association support the position that the WAMI Program should not be reduced in size in an effort to reduce new entrants into the field of medicine; and

BE IT FURTHER RESOLVED, that the Alaska State Medical Association support legislative and lobbyist efforts to fully staff the necessary level of faculty and program needs of the WAMI Program.

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DELEGATE'S REPORT:
1982 ANNUAL MEETING OF THE AMA HOUSE OF DELEGATES

The AMA House of Delegates met in Chicago June 13-17. There were 305 delegates seated making this session the largest on record. The Alaska State Medical Association was represented by Richard Witt, M.D., the delegate, Douglas Smith, M.D., the alternate delegate, Art Tilgner, M.D., the president and Martha McDermaid, the executive director.

All of us enjoyed the cordial hospitality of the California delegation with whom we caucused each morning and most noons. The Californians have invited our presence and participation in their meetings for a least three years now. This has enhanced our ability to understand what is going on as well as our effectiveness on the floor and in the reference committee hearings.

This year we had two resolutions from the annual ASMA meeting in Fairbanks on the agenda. One which arose from the Anchorage Medical Society which Resolved, That the AMA seek legislation which would enable a physician providing medical care to patients under the Medicaid or Medicare programs to be permitted to deduct as a charitable contribution from corporate or personal income tax that portion of his services not covered by the above programs, or to deduct the total of his rightful fee as a charitable contribution and not bill Medicaid or Medicare for his service.

There were several other resolutions in a similar vein plus a report of the Council on Medical Service. The House voted to adopt the Council report G, but urged the Council to keep the matter of charitable foundations and contributions in mind in its continuing study.

Our second resolution which was considered came from the ASMA council via Ketchikan and Resolved, That the AMA oppose granting tax exemption for any advertising or promotional activity for any alcohol or tobacco product; and be it further Resolved, That the AMA encourage and commend advertising and education activities urging abstinence or moderation in the use of alcohol and tobacco.

The house voted to not adopt this resolution as it would set a precedence for manipulation of the tax code for purposes for which it was not intended. It was noted that the real intent of the resolution remodification of the use of alcohol and tobacco is well spoken to by current AMA policies and activities.

A multitude of other matters were debated and voted upon. Our delegation spoke to our own resolutions as well as other matters in the reference committee hearings.

Among the more important matters considered were the following:

The House approved AMA development of a Health Policy Plan for the nation. The purpose is to establish the private sector's national agenda for dealing with health issues.

The House adopted two reports and three resolutions calling for continued strong support for federal legislation pertaining to Federal Trade Commission jurisdiction over the learned professions. Prominent in this legislation is S 1984 which provides clearly that the FTC does not have jurisdiction over the professions and cannot pre-empt state laws relating to the professions. These provisions were offered as an amendment to S 2499 by Senator Ted Stevens, (R. Alaska).

In its report E, the AMA Board of Trustees recommended a section on hospital medical staffs in the House. The House voted to authorize a study committee on this matter.

The House approved an increase in regular dues of $30 in 1983. This was considered needed in order to continue the expensive work of the Association.

In the matter of "Future Directions for Medical Education" the House approved a proposal calling for a revival of the general internship as the transitional year between medical school and residency.

The House voted to continue to support equity in pension plans, including appropriate increases in the maximum contribution to self employed retirement plans (Keogh), and actively oppose enactment of H.R. 6410, the Pension Equity Tax Act of 1982, in its form as introduced because of major discriminatory provisions.

Several resolutions were adopted regarding tobacco and health. In these the House reaffirmed its support for the concept of a federal office on smoking and health and voted to support the concept of self extinguishing cigarettes.

A number of excellent reports of the AMA Council on scientific affairs were adopted including those pertaining to 1) sodium in processed foods, 2) continuous ambulatory peritoneal dialysis and 3) fetal effects of maternal alcohol use. I recommend them for all physicians to read.

In the all important matter of election of officers Dr. Frank Jirka of Illinois was elected President Elect. The entire proceedings were highlighted by the inauguration of our friend Bill Rial. M.D. of Pennsylvania as President. Those who were present at the ASMA meeting at Glacier Bay in 1981 will certainly recall Dr. and Mrs. Rial. The new President's address was entitled, "I Have a Concern for Thee" in the manner of the Pennsylvania Dutch, in which he used the "gentle persuasion" to encourage each and all of us to get our house in order. It was truly a neat, scholarly, humorous, gentle but urgent appeal to you and me that we should heed.

As you might suspect I think all of us who attended these sessions of the House of Delegates are truly impressed by the democracy in action. We, with our one vote in 305, can be and are being heard. Our resolutions have made a difference. Doug Smith, Art Tilgner and I urge all members to attend local and state meetings. Participate, speak out, submit resolutions on topics on your concern. They are often the concern of many others, or can become the clarion of the AMA. You and I count.

Respectfully submitted

Richard Witt, M.D.
Delegate

ALASKA MEDICAL POLITICAL ACTION COMMITTEE REPORT JUNE 1982

The 1982 election year may well be a turning point in Alaska history. Several senior legislators are retiring. Reapportionment has altered traditionally secure district boundaries. Many new faces will be present when the 1982 legislative session reconvenes.

President Reagan's effort to "de-federalize" the United States obviously has implications for Alaska as federal regulatory authority is shifted to the state level; there will be no dearth of individuals eager to receive and enlarge that regulatory authority.

The health care industry and physicians in particular have not been immune to federal or state regulations and much of this regulation has been counterproductive. The Certificate of Need law, PSRO, medicare and medicaid represent only some of the areas of federal regulation with which we are familiar. Licensing of paraprofessionals, interference by the Federal Trade Commission and increasing regulations by organizations such as JCAH are other areas of concern. Malpractice problems, while relatively quiescent here in Alaska, are certain to plague us again. There is an opportunity to inform new and veteran legislators of our concern over these issues.

There are opportunities for physicians and organized medicine to be proponents of worthy social issues as well as opponents of onerous regulation. Increasing access and availability of health care in the bush on a private, as well as governmental basis, certainly merits our consideration. Community health issues as well as preventive health measures are clear opportunities for physicians to voice their opinions. Many of these require legislative activity.

As you know, Mr. Rick Urion, has been the Alaska State Medical Association lobbyist for the last two years. He has been invaluable in presenting our point of view to the legislature on many issues of importance. He brings us a clear message. Legislatures want and expect our support. They want our considered and informed input on issues that confront them. They do not want a chaotic cacophony of individual opinion lacking a supported broad base.

To be elected requires a campaign. Campaigning costs **money**. Legislators appreciate contributions to their campaigns. The Alaska Medical Political Action Committee and Mr. Urion would urge concerted action and support in the mentioned areas.

The argument that we are "buying votes" is not realistic considering the maximum allowable contributions under present law. If we are buying anything it is the opportunity to be heard by legislators favorable to our cause. Equally important is the contribution we make to our political system.

At the state medical society meeting in Fairbanks this June, Mr. Urion discussed the practicalities of lobbying. At the conclusion of the discussion most physicians were convinced that we must be politically active. Furthermore, the activity cannot consists solely of a sanctimonious recitation of opinion that we are on the side of truth and justice. We must convince others by action.

Please discuss the issue of the Political Action Committee with our local leaders, legislative co-chairmen Dave Beal and Doug Smith, State President Art Tilgner, and with your collegues. You may be convinced of its importance. Please send a $100 contribution drawn on your non-corporate account to AMPAC, 4107 Laurel Street, Anchorage, Alaska 99504, so your voice can be heard in the 1983 legislature.

David A. McGuire, M.D.
Chairman Alaska Medical
Political Action Committee

LEGISLATIVE COMMITTEE REPORT
JUNE 1982

Introduction

The diagram outlines methods we have used to deal with legislative concerns of the ASMA over the past two years. The ASMA House of Delegates has authorized us to continue for another year.

Our goals are: 1) An effective line of communication with the legislature for medical and health related issues and, 2) as much individual member participation as possible in formulating ASMA policy.

Local Societies and the Council

Individual component societies which may or may not have their own legislative committees must communicate their views to the Council. The most effective communication is by resolution but more informal methods are acceptable. Resolutions or ideas can be used as a basis for formulating ASMA policy at the statewide Council meetings. The Council is thus acting as the formal legislative committee for the ASMA. The Council meets four times a year on a scheduled basis, special meetings can be called for urgent problems. The Association has authorized expenses for one councillor from each component society to ensure adequate regional representation.

Resources

The ASMA office in Anchorage monitors the progress of health related bills during the session and will provide regular updates to local society presidents or designated local legislative chairmen. Complete current copies of the bills are available through the local Legislative Affairs Offices around the state. The ASMA office can entertain questions at any time.

Legislative Chairmen

Dave Beal and I, as Legislative Co-Chairmen, have been working in concert with Rick Urion, our lobbyist, to formulate and direct both strategy and implementation and/or tactics. When the Council has determined policies of the ASMA, we look for legislative approaches. We may need, for instance, a sponsor for desirable legislation, or a reaction in some fashion to bills already before the Legislature.

As noted by the double arrow on the diagram, communication must be bidirectional, our lobbyist must be kept informed of ASMA positions, and he must relate back what is happening in Juneau.

Five years ago the ASMA decided that a professional lobbyist was necessary if we were to be effective in Juneau. Rick Urion has been working with the Legislative Committee for the last two years and has proven to be skillfull in dealing with legislative matters. Most of his work is in session but he also monitors Juneau year around.

Lobbying is a major expense of the ASMA -- it is about $100/member/year, but as the state government becomes further involved in medical matters, lobbying will be of increasing importance.

Public Testimony

Hearings and statewide teleconferences are held frequently during the legislative session. On occasion strategy requires ASMA testimony. We may ask some of you to help by participating. Matters of widespread concern or requiring special expertise are often demonstrated far better by individual member testimony than by official ASMA statements.

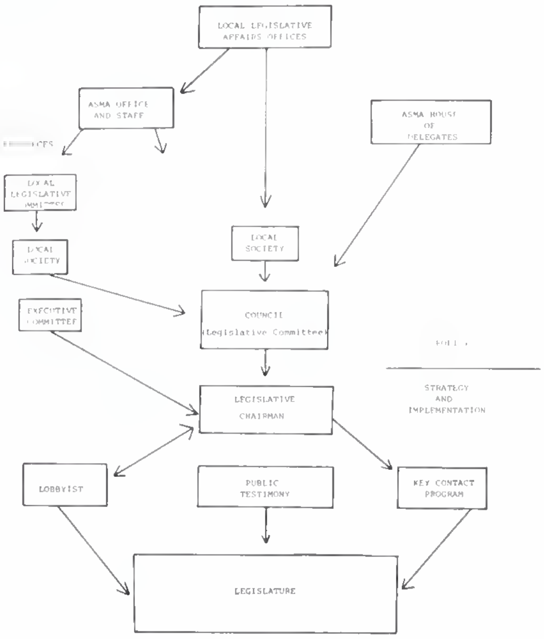
Key Contact Program

When contact with a particular legislator is necessary the ASMA may request a member who has personal acquaintance to act. It can be done in person, or by mail or telephone. We encourage participation in the program and will be contacting some of you after the November elections when we know the composition of the legislature.

Summary

Numerous bills such as those relating to licensing of lay midwives, licensing of naturopaths, the "State Health Plan", and the Medical Practice Act, come before the legislature each session. These have long range implications for medical practice in Alaska.

My purpose in this review is to acquaint readers with the Association's legislative process and to clarify how individuals can participate. Membership in the Association and participation can only make the voice of organized medicine stronger in Juneau.



Doug Smith, M.D.
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PHYSICIAN OF THE YEAR 1982

Samuel A. McConkey, M.D.

Selected as Alaska Physician of the Year, 1982, because of his outstanding work in the medical community in organizing the medical delivery for the Arctic Winter Games in Fairbanks during the winter of 1981-82, Samuel A. McConkey, M.D. is a distinguished physician and a true Alaskan. He resides in Fairbanks in a log house with his wife Janey and their two children, Sam Allen, Jr. and Beth. Dr. McConkey is a member of the Eye, Ear, Nose and Throat Clinic. He is a member of the Fairbanks Medical Association and the Alaska State Medical Association. He has served as a Councilor for the Alaska State Medical Association for several years.

Born in Huntington, West Virginia on August 19, 1940, Dr. McConkey attended West Virginia University in Morgantown where he graduated as president of the student body. He attended the Medical College of Virginia and remained there for his internship and surgical residency. Upon joining the United States Army in 1968, Dr. McConkey was sent to Alaska where he has remained except for a short stay Outside at the Medical University of South Carolina for his ophthalomologic training.

Even with his many activities and active practice Dr. McConkey finds time for hobbies of horseback riding and shotgun collecting.

Dr. McConkey is honored by his fellow Alaskan physicians for his excellence in the practice of medicine and his unique contribution to the Alaskan medical community in 1982.

Prepared by:

Richard Parry, M.D., President
Fairbanks Medical Association

John Middaugh, M.D.

Dr. John Middaugh is a 34 year old former Ohioan who currently is the Chief State Epidemiologist of the Center For Disease Control. John has been elected Physician of the Year for his outstanding work in the public health field.

John and his wife Jacqueline have two daughters born in Alaska, Marquerite and Nicole. Prior to coming to Alaska, John completed his formal education at the University of Wisconsin Medical School and the first portion of the internal medicine training at Harborview Medical Center, University of Washington. In 1975, John came to Alaska as a member of the Epidemiology Intelligence Service and for a period of two years was acting State Epidemiologist. Because of his intense interest in the field and many projects he became involved in, he extended for a third year before returning to Case Western Reserve to complete his internal medicine training. Following that event John once again returned to Alaska, but unfortunately found his epidemiology position filled. For a short period of time he assumed medical directorship of the Neighborhood Health Clinic. Fortunately John once again assumed the office of Chief State Epidemiologist in 1980 and hopes to remain in that position for some time.

John has been involved in the public health field both at home and abroad, and he has authored multiple publications regarding his multitude of projects. Some of the more outstanding projects John has been either in charge of or played a significant role in have been the Diptheria/Tetanus Vaccination Program which began in 1975. Following an outbreak of 22 confirmed cases, 220,000 Alaskans were vaccinated in a 2 week mass vaccination program. John is proud to report that since that time no new cases have been clinically recognized. In addition, John is quite proud of the school immunization program in which he participated 1975 through 1978. Alaska was the first state apparently to claim zero cases of measles and rubella from 1973 to 1976. Following a new case 35,000 vaccinations with a no shots no school policy was reinstituted, and since that time no indigenous cases have been reported.

In addition, John has been involved with the Rabies Control Program, the results of which have recently been reported in the American Journal of Public Health. John began the first consultative service for rabies since the new vaccine. As a result of his consultative work, approximately 30,000 persons have avoided the painful vaccination series at the saving of 3.2 million dollars.

Other notable programs include the Alaska Statewide Streptococcal Prevention Program, begun in 1976 for all villages with greater than 200 persons. At the present time there are more than 200 villages so enrolled. Since 1976 the number of new cases of rheumatic fever has been dramatically reduced so that the average is now less than 3 cases per year.

Most recently as we are aware, John has been actively involved in assessing the potential health and environmental impact of the Petrochemical Industry. His in-depth reports to the state as well as his organization of the Seventh Alaska Health Congress which dealt with the energy, health, and environmental impact of Petrochemical development were invaluable in the creation of an information base for the state. Under his directorship, this conference was attended by medical and industrial experts from all corners of the globe.

As Chief State Epidemiologist, John has been able to emphasize the need for continued public health programs. John is quick to point out the tremendous tradition of the Alaska Public Health Program, emphasizing that many of our preventative programs preceeded and helped design national programs. He proudly states that there have been no cases of polio since the 1960's, one case of tetanus in the 25 years. Diptheria, measles, and rubella may be wiped out in Alaska as a result of active public health programs. John feels he has "a unique opportunity to act as a liason between the practitioners and the bureaucracy involving public health issues". Although he misses direct patient contact he plans to continue his active role in public health matters because of his firm conviction of the need to protect Alaskan citizens and the Alaskan environment.

Alaska is fortunate to have an individual as capable, dedicated, and energetic as Dr. John Middaugh. His recognition as Physician of the Year is testimonial to the fact that his efforts are greatly appreciated.

Prepared by Steven Tucker, M.D.

A.H. ROBINS 1982 COMMUNITY SERVICE AWARD

Charles Sternhagen was born 1933 in Glasgow, Montana. He grew up as one of seven surviving children of a French-Irish mother and Bohemian father. Chuck's father was very active in civic affairs in Glasgow and emerged as one of the leaders of the small community. Chuck, an achiever, was well-known for his musical and athletic abilities. He was outstanding in football (all-time all conference half back culminating in an offer by the Baltimore Colts), track (local college record holder), and basketball. He married his high school sweetheart, Marlene Kuebler in 1952. (The marriage has proved to a very happy one.) Chuck graduated from Loyola University Medical School in 1959. Following internship, he worked as a general practitioner in Montana and Idaho. For several years he was an industrial physician and consultant in radiological health. By 1969 he was corporate medical director of Kerr-McGee in Oklahoma City. He entered a residency in radiation oncology in 1969 at the University of Oklahoma. In 1972 he joined the faculty of the University of New Mexico and became involved in teaching, research, and clinical radiation therapy. He became an Associate Professor of Radiology in 1978. At the University he was particularly interested in Pi-Meson radiation and hyperthermia as related to radiotherapy.

Chuck arrived in Anchorage, September 1978, to assume the leadership of the Providence Hospital Cobalt Center. Objective observers at that time would have said he was lowering his standards, moving from an Associate Professor of Radiology at a distinguished Cancer Research Institute to a position of solitary radiotherapist in a far away outpost of medicine with primitive equipment. From Chuck's point of view Alaska presented not only a stimulation challenge but opportunity. He saw a need for service, Alaska perhaps being the last and only geographic section of the United States which did not have proximate access to modern radiotherapy.

Within a few scant months of Chuck's arriving at Providence Hospital it was evident that his perception of a change was accurate. The volumes of patients being treated on the Cobalt unit increasing dramatically herald remodeling of the radiotherapy area in 1979. There were significant improvements in staffing and back-up expertise, including the addition of a computerized treatment planner and a simulator. The faithful cobalt unit, with moans, groans, squeaks, and rattles not withstanding, was still the only mode of therapy, inadequate for many patients. Consequently, an AECL Therac 20 MeV dual mode linear accelerator was installed March 1981. It was housed in a new addition adjacent to the Cancer Therapy Center. The prodigious construciton included 8 ft. thick walls and a 5 ft. thick roof. It was dedicted on March 1981, the equal of virtually all other radiotherapy centers and the envy of most. Patients are now able to receive both variable voltage gamma beams - 6, 9, 13, 17, & 20 MeV - as well as electron beam therapy.

Interstitial radiotherapy, a popular and often effective method of treating cancer in the 1920's-40's was begun by Chuck at Providence. Renewed interest has more recently been kindled by the development of newer and better radiotherapy sources. Chuck's experience in interstitial therapy has been an innovation to radiation oncology in Alaska. He has treated many conditions over the years and implanted such diverse lesions as carcinoma of the breast, prostate, pancreas, head and neck, floor of mouth, chest wall, uterus, and anal lesions.

Chuck's accomplishments are certainly impressive. Even more impressive and more important are his personal characteristics: a good and caring physician. In a speciality where virtually every patient is in personal crisis the pressures and demands are enormous. Chuck's ability to deal with patients and their problems in a kind and supportive way is a tribute to his depth of character. His strong Christian beliefs no doubt sustain him as well as for his every enlarging family - including their twelfth child who is now six years old. He is a physician who gives credence to the much used phrase "The Good Doctor".

THE SOUNDING BOARD

Modest Proposal

JCAH proponents for more precise credentialing of privileges in Internal Medicine claim that procedural difficulties are overstated. The following outline demonstrates that this is true and it can, in fact, be easily done. The outline is suggested as a framework for future bylaws changes.

I. BASIC PROCEDURES

A: The credentials committee shall credential all applicants for privileges in Internal Medicine and all department members yearly.

B: Each applicant and each member shall yearly present the Credentials Committee a copy of the International Classification of Diseases (ICDCM) and shall request privileges for **each** disease desired at the appropriate LEVEL.

C: Definitions of LEVEL

1) LEVEL: I: PA or Nurse Pratitioner
   - II: Family Practitioner, uncertified
   - III: Family Practitioner, certified
   - IV: Internist, uncertified
   - V: Internist, certified
   - VI: Subspecialist in specific disease category, certified
   - VII: Academic rank of Associate Professor or better in subspecialty

2) A physician may **advance** his LEVEL one (1) increment for each 25 notarized case summaries of any given disease submitted to the Credentials Committee.

3) LEVEL may be **decreased** by an appropriate increment for each error in management of any disease as ascertained by the Quality Assurance Committe (QAC). The negative increment will be determined by the QAC from a point system relating to the severity of the error.

D: Each applicant and each member **yearly** shall be assessed by the Department of Psychiatry with MMPI and IQ test scores and a Judgement Index (JI) determined on the basis of 100%. The JI shall be multiplied by the level in each disease category to determined Selective Quantitative Unbiased Effective Assessment Level (SQUEAL), for each disease.

E: The above procedures shall constitute basic credentialing.

II. RESPONSIBILITIES OF THE ADMINISTRATION

A: The Administration shall install computer capability of adequate capacity with terminal outlets at each clinical unit.

B: All data for each department member shall be entered and stored in the computer. This data shall include but not be limited to name, age, sex, marital status and harmony, children and ages, alcohol tolerance and average consumption, other drug use, health status, number of each disease treated and QAC rating of treatment and a complete listing of the member's SQUEAL status for each disease.

C: The Administration shall provide automated BA and drug analysis and computerized alertness screening for computerized consolidation into the physician's Current Clinical Competence Index (CCCI). The CCCI will be automatically multiplied by the physician's SQUEAL to obtain one integrated SQUEAL (I SQUEAL) for each disease.

III. CLINICAL COMPLEXITY ASSESSMENT

A: The Credentials Committee shall assess and define Clinical Complexity Levels (CCL) for each disease listed in the ICDCM with rigid written criteria for each level of complexity within each disease listed.

B: All the CCL's for each disease in the entire ICDCM shall be stored in the computer.

IV. CLINICAL APPLICATIONS

A: Before assuming or continuing care of a patient a member must determine his Current Clinical Competence Index (CCCI).

B: Before assuming or continuing care of a patient with any given disease(s) the member shall enter the diagnosis and clinical data into the computer for analysis and determination of the Clinical Complexity Level for the disease(s).

C: A disease CCL falling above the member's I SQUEAL requires mandatory consultation with a staff member whose I SQUEAL is > or = to the CCL.

D: Should the member's I SQUEAL be < the CCL a disparity will result.

E: The computer will be programmed to compare relevant I SQUEAL's and CCL's for disparities and shall interlock with the pharmacy, lab and CSU computers to detect initiation or continuation of care.

F: In any instance where a disparity exists and care is initiated or continued, an automatic alarm shall sound in the offices of the QAC, State Medical Board, Administration, Alaska Trial Lawyers Association, and the Nursing Office.

G: Upon receipt of a Disparity Alarm, the Nursing Office shall respond immediately to interrupt any treatment initiated.

V. DISCIPLINE

A: Each physician's I SQUEAL/CCL ratio disparity shall be sequentially filed as well as the cummulative total number of disparities (N_d).

B: This N_d shall be available only to the QAC and Credentials Committee for credentialing purposes.

C: A Disparity Index (DI) shall be computed yearly from the following formula:

$$DI = \frac{\sqrt{\text{SQUEAL}_c \cdot N_d}}{N_d}$$

If DI $>$ or = 1, it will be recorded as 1
If $N_d > \text{SQUEAL}_c$, DI becomes an imaginary number.
If $N_d = \text{SQUEAL}_c$, DI = 0; Courtesy Staff Membership at LEVEL SQUEAL I is automatic.
If at any time the DI of a member becomes an imaginary number, suspension is automatic.

D: The Credentials Committee shall access the DI for each physician yearly and compute the SQUEAL for the following year by multiplying the current SQUEAL_c by the DI.

CONCLUSION

It is thus almost self evident that appropriate behavioral modification of doctors can be easily and simply accomplished. Hopefully the JCAH can be convinced that their anachronistic methodology can be refined to meet the target date of 1984.

Signed Winthrop Fish, M.D.

AUXILIARY NEWS

Annual Convention of the American Medical Association Auxiliary

The Annual convention of the American Medical Association Auxiliary was held at the Drake Hotel, Chicago, Illinois, June 13-16. This year marked the 60th anniversary of ASMA.

One was impressed by their organization and enthusiasm. The structure was similar to conventions of our national political parties; the tone intense and the schedule demanding.

Convention duties officially began late Sunday afternoon with the opening meeting of the AMA Auxiliary House of Delegates. The keynote address was delivered by Lynn M. Martin, freshman U.S. Representative from the 16th district, Illinois. She spoke of leadership motivation and volunteerism. Listening to Rep. Martin was a treat. Sunday evening there was a reception honoring Mrs. Harry Dvorsky, President, and Mrs. Torrence Payne, President-elect.

Monday morning the real work began: Reference Committee hearings on health and finance, and open hearings on By-law revisions. Several resolutions were considered; two of them stimulated most of the discussion and both affect Alaskan Auxiliary Members.

Resolution 10 - Regional Cluster Meeting

The Reference Committee felt that the Regional Cluster meeting provided new state leaders with needed Leadership training and a forum for discussion. Since such training sessions for state presidents and presidents-elect are being incorporated into the 1982 Leadership Confluence Program, the Reference Committee requested that the Long Range Planning Committee study the response to their new programming. This resolution passed.

Resolution 7 - Confluence Eligibility

This resolution was of real concern to states allowed to send only two delegates. These states have been pressing for more flexibility for their two allotted delegates. The Reference Committee recommended that this resolution be adopted or ammended. In the future states having only two allotted delegates will be allowed some flexibility in their choice of delegates sent to Confluence after consultation with the AMA Auxiliary President and the Executive Director.

Each convention day was packed with hearings and workshops. Tuesday, Rhea Seddon, M.D., Mission Specialist from NASA, spoke on the space program and nutrition. Wednesday, Carol Nadelson, M.D., Professor and Vice Chairman of Psychiatry at Taft University conducted a seminar on family relationships and the medical marriage.

The convention was really not all work and no play.

This year's delegates got a special treat. Tuesday evening we were bussed to the Arie-Crown Theater for a performance of "The King and I" starring Yul Brynner. A packed auditorium saw Chicago pay tribute to Mr. Brynner on the anniversary of his 50th year in show business. He was terrific and Chicago really let him know it.

The annual convention provided an opportunity for the exchange of ideas with other auxiliary members from all parts of our country. I hope that I will be able to pass along some of their ideas and enthusiasm during this coming year.

Scholarship

Deciding on this year's scholarship winners was not an easy task. We received a total of 31 completed applications over the course of two months.

During the Alaska State Medical Association Auxiliary Annual Meeting in Fairbanks the Scholarship Committee met on June 7, 1982. The committee members were Susan Bowers (acting chairman for Ginny Pister), Dr. Marian Witt, Lydia Tschopp, Marge Muzzall, of Anchorage; and Joyce Tilgner of Cordova. After much discussion and deliberation, two finalists and alternates were selected for each $750.00 scholarship.

The first winner was Victoria Doty, 17, from Palmer High School, Palmer. She transferred there from Bartlett in Anchorage during her senior year. Victoria is planning to study for her B.S. in Nursing at Pacific Lutheran University, Tacoma, Washington.

The second winner was Janette Shackles, 26, of Fairbanks. She is presently attending the University of Alaska, Fairbanks, and plans to go to Howard University in Washington, D.C., for her medical degree.

The two alternates are Kathleen MaQuire of Anchorage, and Kathleen Wilsack of Kenai. Kathleen MaQuire is currently a student nurse at the University of Alaska, Anchorage. Kathleen Wilsack has graduated from Kenai Central High and plans to attend St. Benedict's College in Minnesota, working toward a medical degree.

Congratulations to all the winners and alternates of the Alaska State Medical Association Auxiliary Scholarship.

Thank you, Scholarship Committee, for your time during the annual meeting.

Marge Muzzall, President
Alaska State Medical Association Auxiliary

LOCAL NEWS - Anchorage
Annual Shape Up For Life Run

The second Annual Shape Up for Life 10K Run, sponsored by the Anchorage Medical Society Auxiliary took place Saturday, May 1st.

We clocked 498 runners across the finish line with Laddie Shaw, a well known Anchorage runner, taking first place with a time of 34:29.

Our first place physician winning for the second year was Jan Nyboer with a time of 37:13 to beat last year's time of 37:23.

Our first place Auxiliary member went to Patti Nathanson with a time of 44:08 which delighted all of us.

The weather was beautiful and the course was in excellent shape with few changes for the better over last year. It all went off without a single hitch. Standing at the finish cheering all our runners on, then walking through the crowd listening to everyone, I heard many good things and I felt very proud to be a part of it all. The support from everyone who helped as well as all our runners was wonderful. Thank you all so very much.

Next spring we will hold the Third Annual Shape Up and I know we'll have an even better run. I hope to see even more of you on the course.

Place in Group	Name	Time	Overall Place	
	MEN 0-14			
13	Waldroup, Jesse	1.12:44	473	
	MEN 30-39			
1	Shaw, Laddie OVERALL WINNER	34:29	1*	
6	Nyboer, Jan	37:13	14*	1st Doctor
18	Newman, Mark	40:22	45	
33	Siefert, David	43:40	89	
50	Farleigh, Rick	46:16	144	
68	Newman, Michael	49:28	205	
71	Morresy, Leo	49:34	208	
85	Nathanson, Steve	53:12	268	
86	Sonneborn, David	54:13	286	
	MEN 40-49			
9	Ferucci, Leonard	42:10	61	
10	Webb, Dale	42:53	69	
13	Brownsberger, Keith	44:00	93	
26	Wrigley, John B.	47:52	175	
45	Little, Jerry	53:18	271	
50	Lanier, Jim	55:51	310	
55	Schriever, Gerry	56:39	322	
59	Wieland, Tryon S.	1:01:07	391	
61	Wolf, Aron	1:02:47	419	
63	Waldroup, Elwood E.	1:12:55	474	
	MEN OVER 50			
2	Hood, Fred	53.35	275	

Place in Group	Name	Time	Overall Place	
	WOMEN 0-14			
1	Lanier, Margaret	46:02	136	
7	James, Molly	59:54	374	Daughters
11	Wieland, Jennifer	1:02:28	414	
	WOMEN 20-29			
5	Nathanson, Patti	44:08	100	1st Auxiliary
54	Woods, Kathleen A.	1:08:42	464	
57	Stears, Sheri L.	1:13:54	484	
	WOMEN 30-39			
14	Newman, Anne	51:22	234	
38	Newman, Kathy	57:28	339	
43	Koivunen, Valerie	58:29	357	
51	Nist, Wendy	1:01:39	399	
	WOMEN 40-49			
7	Wrigley, Susan	53:40	280	
13	Gates, Jill	58:11	351	
18	Wieland, Marianne	1:02:00	407	
22	Brownsberger, Sally	1:03:53	428	
25	Lanier, Ann	1:06:43	447	
	WOMEN OVER 50			
3	Hood, Doris	1:06:04	442	

Suzanne Mues, Chairman
Shape Up For Life Run

It's no accident.

The fact that our area leads the nation in holding down health care costs is no accident. It's the direct result of voluntary health planning.

Physicians, hospital and clinic administrators and managers, governmental representatives and the public at large have worked together to produce a model health care system in Washington and Alaska. Even health care providers not directly involved in health planning have a say.

The recent trend toward consolidation and joint operation of hospitals...the addition of professional planners to hospital staffs...the recognition of the importance of the relationship between hospitals, physicians and third party payors such as Blue Cross...have also contributed to the success of the system and the containment of health care costs.

We're proud of the success of voluntary health care planning in this area. We're pleased to be part of the process.

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Good health coverage is up to us. Good health is up to you.

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PHYSICIAN SELF ASSESSMENT

CHOOSE THE ONE MOST APPROPRIATE ANSWER

1. The treatment of choice for Giardiasis is as follows:
   a. Metronidazole
   b. Quinicrine hydrochloride
   c. Furazalidone
   d. Chloroquine hydrochloride

2. At 20°C which of the following water treatment methods effectively kills Giardia lamblia cysts?
   a. Halazone
   b. Bleach
   c. Globaline
   d. Saturated I_2
   e. None of the above
   f. All of the above

3. The usual habitat of Giardia lamblia in humans is:
   a. Stomach
   b. Upper 1/3 of small intestines
   c. Ileum
   d. Cecum
   e. Colon

4. Which of the following statements is true about Giardia lamblia infections:
   a. The trophozoite has 4 nuclei
   b. The nuclei of the trophozoite are in the region of the sucking disc.
   c. If untreated, life long infection ensues
   d. The ingestion of red blood cells signifies pathogenicity

5. In which of the following clinical states is Staphylococcus aureus bacteremia more likely to be associated with endocarditis:
   a. A 50 year old females diabetic with furunculosis
   b. A 29 year old male paraplegic with decubital ulcers
   c. A 75 year old male with an infected hip prosthesis
   d. A 21 year old male with fever and muscle aches

6. The Staphylococal scalded skin syndrome is:
   a. Produced by the alpha hemolysin of Staphylococcus aureus
   b. Associated with type II bacteriophage
   c. Seen most often in patients over 70 years of age
   d. Associated with large bullae from which the causative organism is isolated.

The concept of bacterial tolerance is a relatively recent one. The following True-False questions relate to this phenomenon:

7. Tolerant strains of organisms are only found in Staphylococcus aureus.
8. In tolerant strains, the MBC (Minimal Bactericidal Concentration) of an antibiotic is 8 to 100 times greater than the MIC (Minimal Inhibitory Concentration).
9. Tolerant strains of bacteria are autolyzed more rapidly than nontolerant strains.
10. Patients with endocarditis, who are infected with intolerant strains of Staphylococcus aureus, have a higher mortality than patients infected with non-tolerant strains.
11. All patients with tolerant staphylococcal infections should be treated with gentamicin or rifampin.

Match each statement in column II with the appropriate letter designation from column I.

Column I

12. A. Orbital Cellulitis
    B. Periorbital cellulitis
    C. Both
    D. Neither

Column II

1. Lid swelling and erythema
2. Haemophilus influenza
3. Cavernous Sinus Thrombosis
4. Ophthalmoplegia
5. Serratia marcescens
6. Proptosis
7. Impaired vision

13. A. Herpes Simplex type I
    B. Herpes Simples type II
    C. Both
    D. Neither

1. Positive Tzanck smear
2. Encephalitis
3. Erythema multiforme
4. Keratitis
5. Parotitis
6. Urogenital infections

14. A. Cefamandole
    B. Cefoxitin
    C. Both
    D. Neither

1. A Cephalosporin
2. A Cefamycin
3. Indicated to treat Bacteroides fragiles
4. Dose reduction in renal failure
5. Good to use in treating meningitis

15. A. Plasmodium vivax
    B. Plasmodium falciparium
    C. Both
    D. Neither

1. Can be treated with chloroquine
2. Has a banana shaped macrogametocyte
3. Endemic in Southwest Asia

4. Severe disease in the very young
5. Transmitted by the Culex genus mosquito
6. Recrudescence and occur 30 years later

16. A. Hepatitis A virus
B. Hepatitis B virus
C. Both
D. Neither

1. Course modified by gamma globulin
2. A 27 nm particle
3. A vaccine is available
4. Chronic infection
5. Incubation period of 45 days
6. Cause modified by acyclovir.

17. The concepts of treating urinary tract infections are changing. In which of the following clinical situations would you consider giving a one day course of therapy?

A. A 48 year old male with recurring infections
B. Adult female with diabetes and left flank pain
C. A 23 year old female with 3 previous bouts of cystitis who is leaving tomorrow on a two week camping trip
D. A 16 year old female with two previous bouts of cystitis who became symptomatic one day ago
E. A 70 year old man with bladder calculi.

18. In which of the above situations would you consider treating for three to ten days?

EKG OF THE MONTH

The electrocardiogram is from a 65 year old lady hospitalized for a week long illness characterized by myalgias, fatigue and episodes of lightheadedness. She has taken no cardiac or antihypertensive drugs. The past history is unremarkable. She never had dyptheria, rheumatic fever or chronic infectious illnesses. No brother or sister has had heart disease.

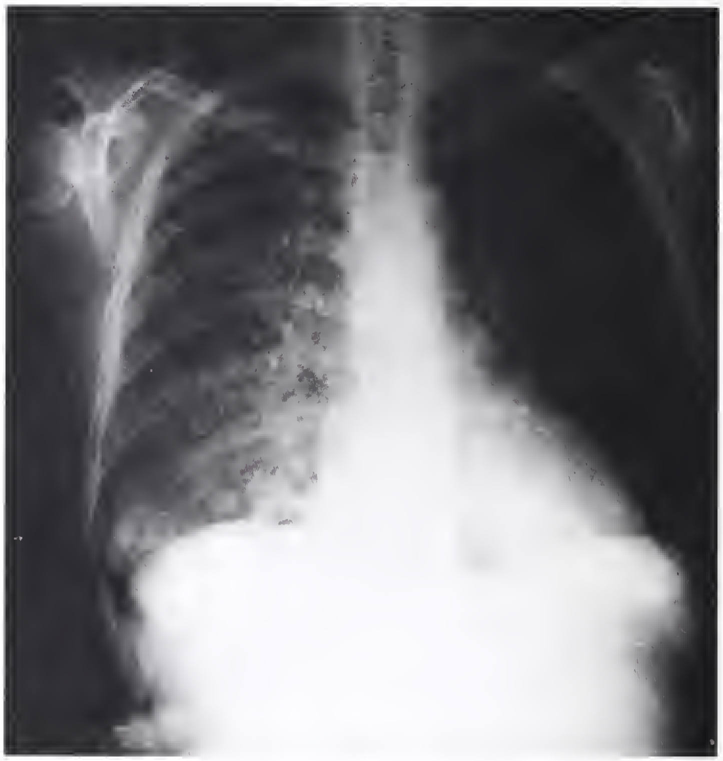
The twelve lead electrocardiogram (Figure 1) and continuous rhythm strip (Figure 2) demonstrate three cardiac impulse generation and conduction system abnormalities.

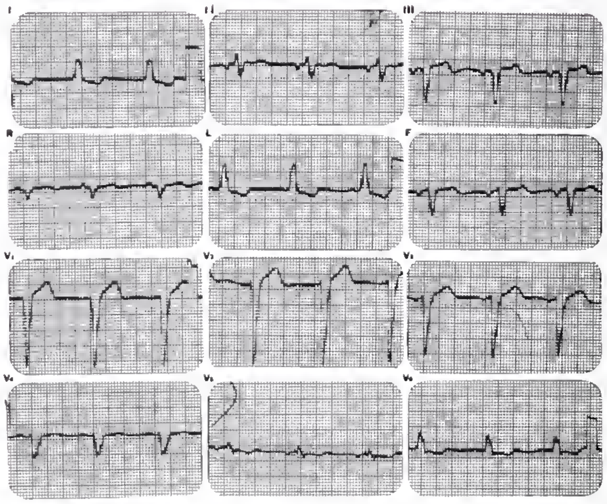
Questions: 1) What are the EKG abnormalities demonstrated?, 2) What is the most likely etiology of the abnormalities? and 3) How would you treat the problem?

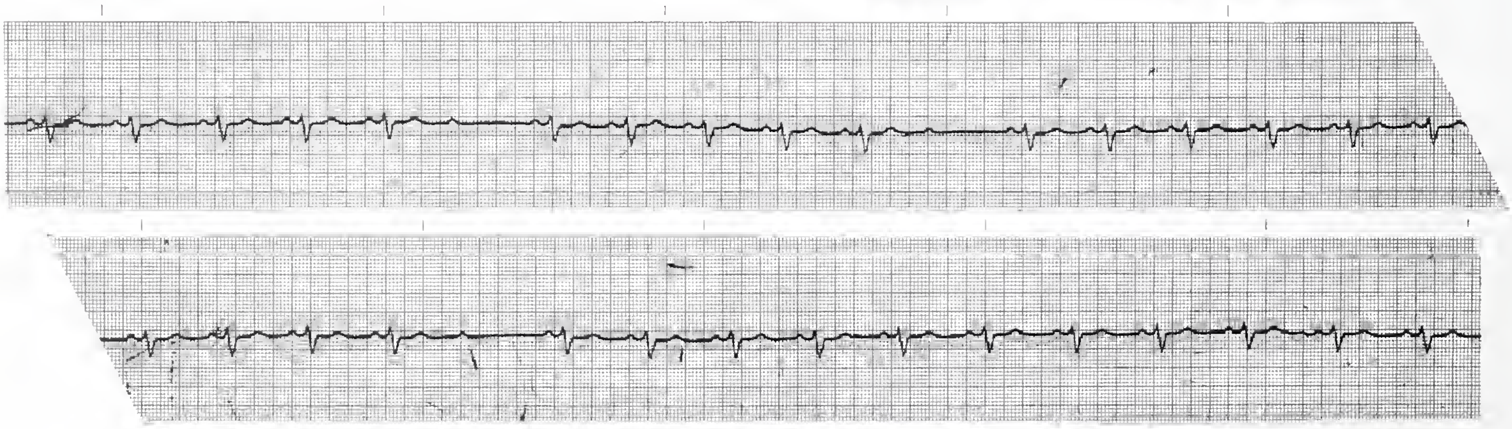
X-RAY OF THE MONTH

History: The patient is a 50 year old white female with chronic cough, hemoptysis and hematuria. The history is otherwise unremarkable.

Radiographic findings: There is a diffuse fine reticulonodular interstitial infiltrate noted in the right lung field. It is more prominent in the right mid lung field and right lower lung field. To a lesser extent it is seen in the left perihilar region. It seems to spare the left upper lobe and the lateral lower lung field. No effusion is noted.







STETHESCOOPS by the STETHESNOOPS

To whom do we owe the Eau d'tonsil perfume emanating from the Medical Records room?

It's finally happened!
What young doctor wanted to practice in Kanakanak but got eased out by a nurse practitioner?

In the same vein--
GP's - Beware of the Collaborator.
Did you know this title for a physician? And what is the duty of a collaborator in our newest non-physician health care group?

From our Ketchikan Spy:

There is the saga of one of our esteemed physicians who survived an allegation of malpractice, with appreciation to his good attorney and most supportive colleagues.

And Hartley Hardison leaves his pediatric post with the USPHS-IHS to do a neurology residency back East.

The Special Care Unit opened at Ketchikan General Hospital March one, after years of planning and hard work.

Scandal in this scenic S.E. town has gone underground as activities have switched from skiing to sailing and fishing.

Anchorage's prestigious neurological team got their skills tested in the most recent devastating falls of two Japanese Mt. McKinley climbers.

Houseguest Alert - careful where you sit!
Which of our more intellectual physicians set ten mousetraps on the seats of his chairs? And why?

What local physician, known as mush-mouth, recently took off on a vacation with his sweetie?

Last year one of our intrepid surgeons took his new bride over the Alps on a motorcycle. An equally crazy couple is following suit this summer.

The Municipality has claimed one of our most outstanding Anchorage physicians - after years of private practice. Rod Wilson, we salute you. We will miss you.

A recent newspaper article, so filled with details of opulence and kitsch, has tainted the reputation of our profession.

Which prominent Fairbanks radiologist confused eminent chest physicians at a recent nearby conference as he played Humpty Dumpty with his X-ray? Kudos go to Sherlock Witt who rescued the chest doc's reputation.

Was one of our batchelors really catching fish on the holidays or was **he** being caught?

VITAL STATISTICS

Ross N. Brudenell and Diane F. Wiktorowski - the bells are still ringing.

And in Juneau, radiologist Donald Rooney has a new bride.

Continued lack of concern for the Malthusian problem - John and Jaqueline Middaugh - a daughter on April 23rd.

Till Next Time - our sponors are searching high and low for scandulous news. Do not fear. We will find it and report it all.

(Got a bone to pick, someone who needs a quick stab? Please send any and all info to Dr. Wm. Bowers, 4050 Lake Otis Parkway, Anchorage, Alaska 99504. The STETHESNOOPS will be glad to sort it out.)

POST GRADUATE COURSES

		Credit hours
August 12	**OB/GYN Summer Update Conference** (Providence Hospital)	
August 13	**OB/GYN Summer Update Conference** (Humana Hospital Alaska)	14
November 12, 13	**Antibiotic Treatment of Gram-Negative Sepsis**	
November 19, 20	**Gastroenterology Conference**	

The schedule listed here gives provisional dates and titles which will probably undergo further changes. However, it is unlikely that events will be added.

January 21, 22	**Recent Advances in Neuroscience**
February 11, 12	**Symposium on Headache**
March 19, 20	**Thermal Injury and the Immunoregulatory Response**
March 24-26	**Perinatal Symposium**
April 15, 16	**Sports Medicine**
May 27, 28	**Otitis Media in the Child**
June 20-22	**Critical Care Medicine Symposium**
August 11, 12	**Summer Update Conference/Obstetrics & Gynecology**
September 23-25	**Thermal Conference**
October 7, 8	**Cardiology for Non-Cardiologists**
November 25, 26	**Diseases of the Eye and Skin**
December 9, 10	**Computers and Microprocessors for the Physician's Office**

For information contact: Judy Kyle
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Providence Hospital, Pouch 6604
3200 Providence Drive
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The Graduate School of Public Health, San Diego State University, offers a 9-month, fulltime educational program. The Master of Public Health degree is awarded, with a major in Maternal and Child Health.

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Applications are now being accepted for August 1982. Inquiries should be sent to:

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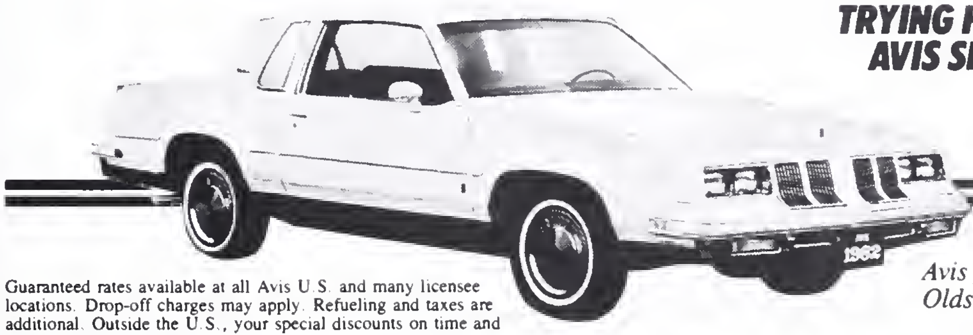

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LETTER TO THE EDITOR

Dear Editor:

Thank you for the kind acknowledgement of my four years effort on behalf of **Alaska Medicine**.

While I appreciate your comment that I "spent countless hours pouring over articles", I find proof reading irresistible; to wit:

> In medieval days the monks did pore
> over manuscripts and ancient lore.
>
> Victorian ladies too did pour
> tea, a simple task and what a bore!

Sincerely,

Gwynneth Wilson

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ANSWERS to PHYSICIAN SELF ASSESSMENT

1. *b* Although metronidazole is used by many physicians to treat giardiasis, it does not have FDA approval for this usage. Reference: Medical Letter 1982; 24:601.
2. *f* Reference: Jarrol EL, etal. Giardia cyst destruction: effectiveness of six small quantity water disinfection methods. Am J Trop Med & Hyg 1980; 29:(1)8-11.
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4. *b* Ibid.
5. *d* Reference: Nolan CM, Beaty HN. Staphylococcus aureus bacteremia: current clinical patterns. Am J Med 1976; 60:495-500.
6. *b* Reference: Kaplan MH, Tenebaum MJ. Staphylococcus aureus: cellular biology and clinical application. Am J Med 1982; 72:248-258.
7. *False*
8. *True*
9. *False*
10. *False*
11. *False* Reference: Kaye D. The clinical significance of tolerance of Staphylococcus aureus. Ann Int Med 1980; 93:6.
12. *C,C,A,A,D,A,A,*
13. *C,C,C,A,D,C*
14. *A,B,B,C,D*
15. *C,B,C,C,D,D*
16. *C,A,B,B,C,D*
17. *D*
18. *C*

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ANSWERS TO X-RAY OF THE MONTH

The differential diagnosis of the disease includes the following:

1. Goodpasture's Syndrome
2. Chicken pox pneumonia (varicella-zoster)
3. Cytomegalic virus
4. Pneumocystis carini
5. Mycoplasma pneumonia
6. Sarcoidosis

7. Tuberous sclerosis
8. Allergic alveolitis
9. Miliary tuberculosis
10. Rheumatoid lung
11. Idiopathic interstitial pulmonary fibrosis (Hamman-Rich)
12. Interstitial pulmonary fibrosis (histiocytosis X)
13. Wegener's granulomatosis
14. Numerous other less likely entities.

Diagnosis: Goodpasture's Syndrome

This entity is difficult to differentiate from idiopathic pulmonary hemosiderosis. Some people feel that it is the same disease. The difference is in Goodpasture's Syndrome there is renal involvement. Typically idiopathic pulmonary hemosiderosis is a disease of children whereas Goodpasture's Syndrome is a disease of young adults. Older adults have been reported with Goodpasture's Syndrome.

Pathologically, intermittent hemorrhages occur within the lung parenchyma. These tend to recur often in the same areas. They may favor one lung over the other. After recurrent hemorrhages, deposition of hemosiderin granules occurs and fibrosis follows. The changes occurring in the kidneys are morphologically similar to those noted in the lung. The etiology of these diseases is not definitely known. It is thought by many to be an auto-immune process. It is felt also to be of a viral etiology. Iron deficiency anemia is a common accompanying problem. In long standing cases, pulmonary insufficiency occurs.

Radiographic changes range from ill-defined interstitial and alveolar infiltrates secondary to acute hemorrhage to a reticulonodular pattern seen several days after the acute hemorrhages. In the early stage of the disease the chest X-ray may then return to normal. After repeated episodes of hemorrhage progressive interstitial fibrosis occurs. Occasionally adenopathy is associated. Kerley B-lines, pleural effusions, and pneumothoraces do not commonly occur.

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ANSWERS TO EKG OF THE MONTH

1) There are two abnormalities of the heart rhythm demonstrated. When the twelve lead EKG is examined the morphology of the P wave is unusual in most leads. It is noticeable best in lead II. An inverted P wave in lead II suggests the atrium is being depolarized from left to right rather than the normal right to left direction instituted by SA node generated rhythm. Reverse direction atrial depolarization can be caused by impulses being generated in an ectopic atrial location or in the junctional conduction tissue. It is interesting to note that the P wave morphology changes from V_4 to V_5 to V_6 suggesting the rhythm alternated between sinus and junctional rhythm over a short period of time.

The second rhythm disturbance is demonstrated in the continous lead II rhythm strip. Note the 6th P wave from the left is not followed by a ventricular QRS complex. The P wave impulse suddenly blocked without warning in the A-V conduction system is called 2nd degree heart block, Mobitz type II. Mobitz type II 2nd degree heart block occasionally may degenerate suddenly and without electrocardiographic warning into complete heart block.

The third abnormality found is left bundle branch block.

2) Coronary artery atherosclerosis resulting ischemia or infarction of the conduction system is probably the most common cause of left bundle branch block and heart block in older people.

3) Since this lady was symptomatic and had both left bundle branch block and Mobitz type II heart block, an electronic pacemaker was inserted. The treatment has the least risk and protects the patient from Stokes-Adams attacks. There is no satisfactory way to chronically treat paroxysms of heart block with drugs.

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in shigellosis... faster relief of diarrhea than with ampicillin[2]

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Before prescribing, please consult complete product information, a summary of which follows:
Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii.* It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.
For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.
For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.
For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.
Also for the treatment of documented *Pneumocystis carinii* pneumonitis.
Contraindications: Hypersensitivity to trimethoprim or sulfonamides, patients with documented megaloblastic anemia due to folate deficiency, pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.
Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted
Precautions: *General* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin, reassess coagulation time when administering Bactrim to these patients
Pregnancy Teratogenic Effects Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus
Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia *Allergic reactions* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis *Gastrointestinal reactions* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea, pseudomembranous colitis and pancreatitis *CNS reactions* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness *Miscellaneous reactions* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients, cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies
Dosage: Not recommended for infants less than two months of age.
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Adults Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp (20 ml) b.i.d for 10-14 days. Use identical daily dosage for 5 days for shigellosis
Children. Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days Use identical daily dosage for 5 days for shigellosis
For patients with renal impairment Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.
ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:
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1. Rubin RH, Swartz MN: *N Engl J Med 303* 426-432, Aug 21, 1980. 2. Data on file, Medical Department, Hoffmann-La Roche Inc.

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The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.
Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.
Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.
The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.
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Dosage: Individualize for maximum beneficial effect. *Adults:* Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).
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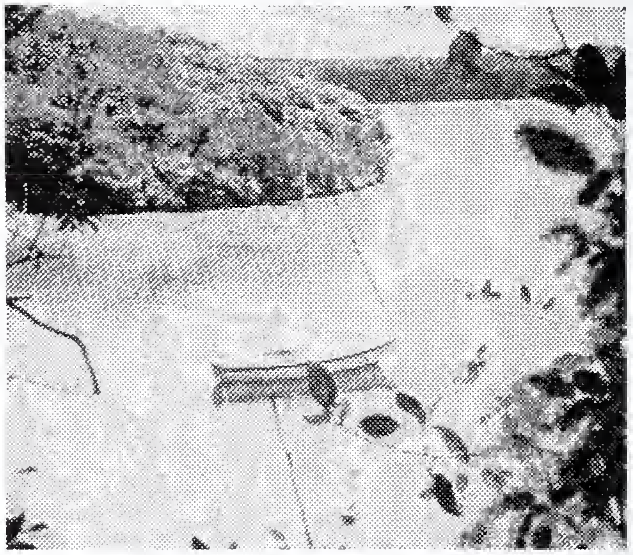

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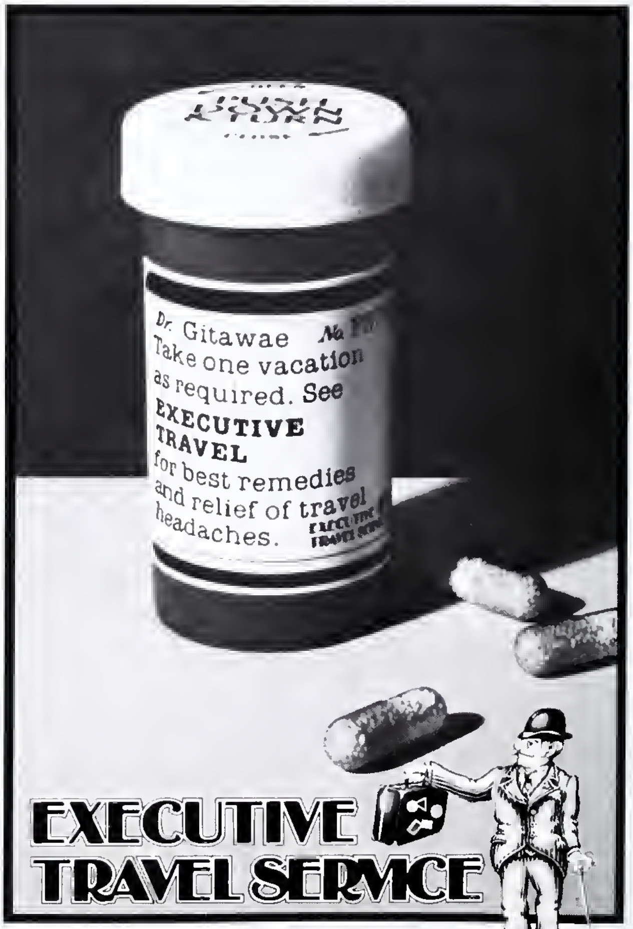
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ALASKA MEDICINE

Official Journal of the Alaska State Medical Association

4107 Laurel, Anchorage, Alaska 99504

Volume 24 September/October 1982 Number 5

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ALASKA MEDICINE is the bi-monthly journal of the Alaska State Medical Association; Alaska Medicine, 4107 Laurel, Anchorage, Alaska 99504. *ALASKA MEDICINE* is printed by Northern Printing Co., Inc., 655 Warehouse Avenue, Anchorage, Alaska 99501.

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About the cover: *Golden eagle* by Leonard Ferucci, M.D.

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ASTHMA: 1982

George Stewart, M.D.

The availability of longer acting bronchodilators and the atropine analog ipratropium bromide (available shortly) makes it possible to tailor a therapeutic program which minimizes the frequency and severity of asthma attacks. This review will summarize the present understanding of the pathophysiology of asthma, the pharmacology of the agents available for its treatment and suggest some approaches to therapy.

Figure 1 delineates some "asthma axioms". When treating patients with asthma it is critically important to remember that in a given patient the severity of an individual attack and the response to treatment may be highly variable.

FIGURE 1

ASTHMA AXIOMS

1). HETEROGENEOUS DISEASE.
    ONSET ANY AGE
    SEVERITY VARIES
    RESPONSE VARIES

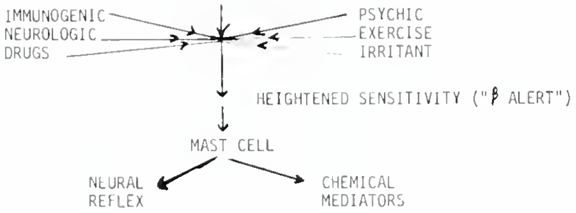
2) PERNICIOUS.
    ANY ATTACK POTENTIALLY FATAL.
    NEVER STOPS WITHOUT TREATMENT.

3). NOT PSYCHOSOMATIC.

4). NEED TO GET CONTROL OR IT WILL CONTINUE.

FIGURE 2

INITIATING FACTORS

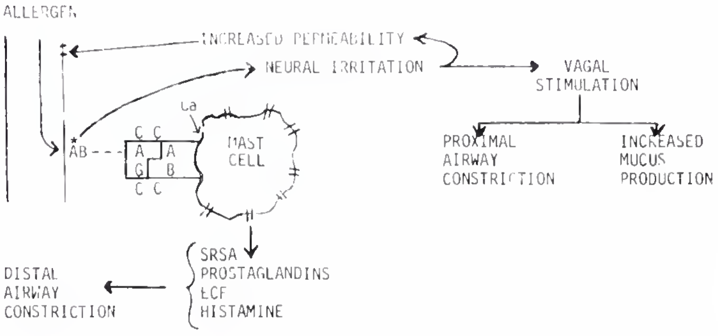


The initiating factors are summarized in Figure 2. Leff (1) recently noted "the extreme variability in etiologic factors suggest that asthma is a syndrome rather than a single disease where airway smooth muscle contraction is a final common pathway. Regardless of the initial stimulus, the final result is a three-component response consisting of 1) increased airway smooth muscle tone, 2) mucus hypersecretion, and 3) regional inflammation of airways".

Figure 3 summarizes the steps which occur when an allergen (AG) enters the airway. AG combines with specific IgE antibody (AB) at or near the airway surface. A portion of the antibody is free within the extracellular fluid and the remainder attached to mast cells. The free portion of AB combined with AG causes neural irritation, secondary local increased permeability to AG and reflex vagal stimulation which produces increased mucus production and proximal airway constriction. The AG-AB combination which occurs at the surface of the mast cell triggers the complement cascade and in the presence of calcium, disrupts the cell membrane leading to rapid degranulation. This releases histamine, prostaglandins, SRSA (slow releasing substance of anaphylaxis -- not yet demonstrated in vivo in humans but may be identical to the arachadonic acid metabolite leukotriene C) and eosinophilic chemotactic factor (ECF). The net result of these compounds is a decrease in cyclic adenosine monophosphate (c-AMP), the bronchial smooth muscle relaxation mediator, and an increase in cyclic guanosine monophosphate

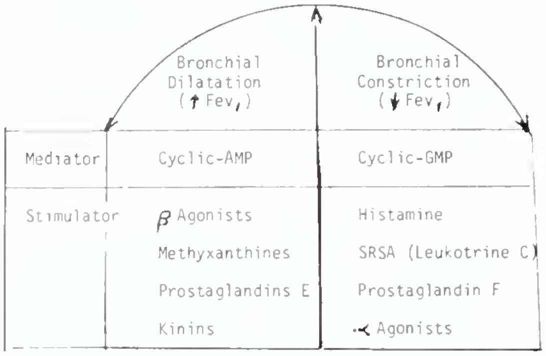
FIGURE 3

CELLULAR RESPONSE



(c-GMP), the constrictor mediator (2). Figure 4 shows how changes in these two mediators determine bronchial smooth muscle tone.

FIGURE 4



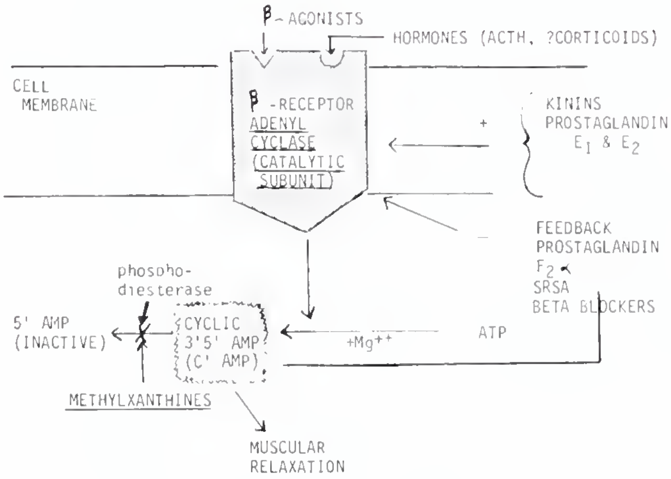
Mediator	Cyclic-AMP	Cyclic-GMP
Stimulator	β Agonists	Histamine
	Methyxanthines	SRSA (Leukotrine C)
	Prostaglandins E	Prostaglandin F
	Kinins	α Agonists

Noxious stimuli (irritants, toxins and viral infections) most likely affect primarily the neural (vagal) limb of the reaction pathway causing large airway constriction (Figure 3).

The pathophysiology of exercise induced bronchoconstriction is still under investigation but some recent studies suggest at least a role for respiratory heat exchange (3,4).

Figure 5 details the steps leading to airway smooth muscle relaxation as mediated by c-AMP. Although the methylxanthines are effective bronchodilators, reference to Figure 5 shows why they are less potent than beta agonists; they block degradation of c-AMP rather than enchance its production (2,9).

FIGURF 5



As clinicians are painfully aware there are an increasing number of aminophylline preparations on the market. My personal rule is: "cheapest is best and follow the serum theophylline level". Unless you adjust the dose of any theophylline preparation to produce a peak serum level of 10 to 20 mcg/ml the patient is not adequately treated. Although the newer preparations may offer some advantage in terms of lower dosage frequency the serum level must still be followed to assure adequate treatment.

Recent evidence shows that in addition to the previously recognized side effects of gastric irritation, nausea, occasional diarrhea and ventricular ectopy (5), aminophylline decreases lower esophageal sphincter pressure causing gastroesophageal reflux (6). If the reflux is severe enough it may lead to perpetuation of asthma due to aspiration and may require modifying the evening theophylline dose.

It is also important to remember that theophylline blood levels are affected by other medications. Erythromycin appears to block degradation of theophylline and leads to an elevated blood level.

The beta agonists are listed by subtype in Table 1 while Table 2 compares the activity of drugs available (fenoterol is not available in the U.S.) and their side effects. The newest (in the U.S.) of these drugs, salbutamol, (known as albuterol) has significant advantages; lower side effects and longer duration of action.

TABLE 1

β_2 - AGONISTS

CATECHOLAMINES -- EPINEPHRINE, ISOPROTERENOL, ISOETHARINE
RESORCINOLS - - METAPROTERENOL, TERBUTALINE
SALINIGINS - - FENOTEROL, SALBUTAMOL

TABLE 2

RELATIVE ACTIVITY

DRUG	β_1 STIMULATION	NEUROMUSCULAR	GI	ONSET	DURATION
EPINEPHRINE	++++	-	±	10 min	1 hr
ISOPROTERENOL	+++	-	+	20 min	2 hr
ISOETHARINE	++½	-	+	20 min	2-3 hr
TERBUTALINE	++½	++	+	20 min	2-3 hr
METAPROTERENOL	+½	-	-	20 min	4 hr
FENOTEROL	+½	-	-	15 min	4-6 hr
SALBUTAMOL (ALBUTEROL)	+	-	-	15 min	6 hr

Methylxanthines are additive to beta agonists (10). The oral beta agonists, metaproterenol and salbutamol, are not only additive to the inhaled form of the same beta agonist when used in combination (7,8). Terbutaline, because of the significant tremer it induces in many patients, has only limited clinical application.

Corticosteroids are next in line for consideration when asthma cannot be controlled with bronchodilators alone. The three most common mistakes made in steroid therapy (freely plagiarized from Dr. Tom Petty) are: too little, too long, too late.

The mechanisms of action of corticosteroids can be listed as: I Probable: A) Increase the number of beta receptor sites, a slow effect; B) increase c-AMP via adenylcyclase stimulation (fast - in a sense acting like a beta agonist); and C) inhibit mediator release from mast cells (exact mechanism not clear). II Possible: A) Inhibit phosphodiesterase; and B) reduce ATPase.

Inhaled beclomethasone has the advantage of virtually no systemic side effects and minimal local adverse effects. A new inhaled preparation (triamcinolone acetonide) presently under study may even have lower systemic side effects (11).

A word of caution in converting from oral to inhaled steroid preparations: begin full doses of the inhaled preparation (2 to 3 breaths 4-5 times a day) and slowly decrease the oral preparation (perhaps over 2-4 weeks if the patient has been on steroids for any period of time).

Role of Vagolytic Agents

Figure 3 notes one of the limbs of the response pathway involving the vagus nerve. Leff (1) summarizes the present understanding of vagal innervation of the first six orders of airways and the subsequent contribution to acute and chronic asthma.

Presently we have only atropine tablets available. The atropine solution used for parenteral administration contains a perservative that is irritating to the airways and should not be used. Inhaled atropine causes significant systemic side effects: gastric atony, tachycardia, flush and psychosis. It should be reserved for severe asthmatics only and used initially in a hospital setting. The dose is one to two tablets (0.6 to 1.2 mgs.) dissolved in the beta agonist solution or saline every 8 hours. Within the next year a metered dose form of ipratropium bromide, an atropine analog with little systemic side effects should be available and should further enhance our ability to tailor a program of therapy.

Cromoloyn Sodium

Although this drug has been available in the U.S. for a number of years it has not achieved major popularity for two reasons. Its use is restricted to those with true allergic asthma and a few children with exercise induced bronchospasm. Its only known action is to prevent degranulation of mast cells. Because it is a powder it tends to be irritating and causes both coughing and wheezing in a number of patients. For those patients who do tolerate it, cromolyn sodium is an excellent agent in preventing attacks of true allergic asthma. It should **never** be used in the face of an acute asthma attack.

New Agents Under Investigation

Three new categories of drugs are being investigated at present:

1. Prostaglandins - PgE_1 and PgE_2 by inhalation have been shown to be as effective as isoproterenol (2). Although slightly slower in onset of action the duration is somewhat longer and side effects less. It is possible that some prostaglandin or prostaglandin analog will be in clinical use within the next 5 to 10 years (2,12).
2. Cannabis has been shown in some cases to be a potent bronchodilator (13) but steric chemists have not been able to separate the psychic from the dilator effect.
3. Calcium channel blockers calcium influx is important both in increasing cyclic-GMP, the constriction mediator, and in the degranulation of mast cells. Some very preliminary data (14) suggests that calcium channel blockers may hold promise in asthma therapy by blocking both of these activities which are bronco-constricting (Figure 3).
4. Inhalation of alpha-blockers such as prazosin (16).

Treatment

Under treatment I will discuss separately stratagems for decreasing attacks in patients with chronic asthma, controlling exercise induced asthma and finally, an approach to the acute or emergency patient with asthma.

A. Chonic asthma

1. Reduce the allergen load. As a general rule homes in which asthmatics live should contain no pets larger than goldfish. Dust can be kept from the lung by simple face mask. Odorous flowers, perfumes and sprays should be avoided.
2. Reduce the antibody responsiveness by hyposensitization.
3. Reduce the irritant load. It makes no sense spending effort and dollars keeping an asthmatic wheeze-free and allowing others to smoke cigarettes in his presence. This is especially true in children with asthma. It makes even less sense for an asthmatic to smoke cigarettes.
4. Reduce the frequency and severity of attacks by use of prophylactic medications. There is ample evidence in the literature to support the concept of reducing the irritability of "twitchy" airways and thereby making them less susceptible to acute episodes. In the summary I will comment on my personal choices amongst those medications that are presently available.

B. Exercise-induced bronchospasm

1. Although cromolyn sodium has been shown to be effective in some children with exercise-induced asthma, its airway irritant effects may be deleterious to someone who is about to exercise. In general it should not be used. A longer acting beta agonist such as salbutamol (albuterol) would seem to be the drug of choice to prevent exercise asthma. In those patients who are not bothered by bronchoconstriction at any other time are instructed to take two breaths of salbutamol immediately prior ro beginning the exercise and if they become aware of any distress during the exercise, to take an additional one to two breaths.

C. Acute asthma

1. The assessment of acute asthma (generally here referring to a patient in the office or emergency department who does not respond readily to simple maneuvers such as epinephrine) should include a determination of arterial blood gas values and where available a measurement of the FEV_1.

The patient should be considered a true

emergency if there is pulsus paradoxicus greater than 10 mms of mercury and arterial PaO_2 less than 50 mms of mercury or an arterial $PaCO_2$ greater than 40 mms of mercury. If the $PaCO_2$ is greater than 50 mms of mercury or an FEV_1 second of less than 1.0 liter, the patient should be considered as critical warranting hospitalization. If the patient manifests fatigue he should definitely be hospitalized.

The therapy of acute asthma in addition to controlled oxygen where appropriate consists of:

a) Aminophylline, 5 to 6 mgs per kilogram as a loading dose, then 0.9 mgs/kg per hour by continuous intravenous infusion.

b) A beta agonist by the inhaled route (metaproterenol if an IPPB machine is to be used or salbutamol by metered dose inhaler until salbutamol solution becomes available), possibly adding a parenteral beta agonist such as terbutaline.

c) Corticosteroids (remember to use enough, i.e. 80 to 250 mgs of methylprednisolone as an initial dose).

Summary

Asthma is a syndrome of acute bronchospasm involving a calcium mediated antigen stimulated mast cell degranulation. The net result is increased cyclic-GMP, decreased cyclic-AMP and bronchoconstriction. In addition a neural limb mediated by the vagus nerve causes proximal airway constriction.

Distal airway dilation depends on combinations of drugs which increase cyclic-AMP. Proximal airway therapy is based on vagolysis.

1. Wherever possible avoid allergens and inhalant irritants.
2. It is absolutely essential to avoid the use of beta blockers in patients with reactive airways since they all have been shown to decrease FEV_1 second. One should also be extremely cautious in the use of prostaglandin depressing salicylates and non-steroidal anti-inflammatory drugs as these may cause very severe bronchoconstrictive episodes.
3. In general oral theophylline therapy must be monitored with serum theophylline levels. No theophylline by itself is able to control a moderately severe asthmatic.
4. The potent low toxicity long-activity beta agonist, salbutamol (albuterol) + beclomethasone makes a safe and effective program for controlling most asthmatics. Theophylline can be added when needed.
5. Ipratropium bromide will be a helpful adjunct to treatment when it becomes available.
6. Most episodes of asthma can be prevented. Any asthmatic with more than "rare" wheezing should be on some continuing medication program.
7. In severe asthma remember blood gas determinations, fatigue and the ABC's of treatment.
8. Recent evidence clearly demonstrates that for maximal effectiveness of albuterol inhalation it should be delivered with a 10 second breath-hold and a 10 minute interval between breaths (up to three or four breaths total every four to six hours). Three breaths at once are **not** as effective as three breaths at ten minute intervals. The same general rule applies to all metered-dose inhaler units (17).

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THE INDICATIONS FOR ADJUVANT RADIATION THERAPY IN PRIMARY BREAST CANCER CASES SELECTED FOR MASTECTOMY

Charles J. Sternhagen, M.D.

The use of post-operative radiotherapy in mastectomy patients improves survival rates. It is essential to use post-operative radiation therapy whenever the axillary nodes are positive in order to achieve the best survival rates. It is also essential to treat the internal mammary and paraclavicular nodes, as a minimum, in any mastectomy patient who has a subareolar or medial quadrant lesion. Radical mastectomy patients who have also had internal mammary node dissections have significantly longer survival rates than patients of the same stage with radical mastectomy alone. The doses necessary to achieve optimum levels of control are in the range of 4,500 to 5,000 rads in 5 weeks for subclinical disease and higher doses are indicated for clinical disease. The chest wall should be irradiated in all cases where the lesion is of a non-favorable type and size, that is, aggressive appearance, pushing and invading borders, lack of inflammatory response with lymphocytic infiltration, vascular or lymphatic invasion, fixation to chest wall or skin, erythema, edema, or larger sized tumors. Local control rate is vastly superior when patients are treated in the subclinical stage as only approximately one half of the lesions which recur in the chest wall or regional nodes can be controlled with radiation therapy after reappearance.

Historical Review

By 1895 radiation therapy was actively in use for treating cancer soon after the discovery of x-ray by Konrad Roentgen, whose one page Nobel prize-winning publication electrified the scientific world. Radiation therapy received another tool that same year when Henri Becquerel discovered natural-occurring irradiations. Then, only three years later, in 1898, the Curies discovered radium which brought forth tremendous advances in the strategic armamentarium available to fight cancer. In 1954 William Halsted and Willy Meyer published their work on radical mastectomy which became the standard operation in the United States.

Perhaps radiation therapy, instead of mastectomy, would have been the standard therapy if Roentgen had discovered x-ray one year earlier. Nevertheless, the benefit of post-operative irradiation was quickly realized early in the 1900 era as it was recognized as capable, even then, in reducing the high incidence of recurrent local and regional disease and relapses in the mastectomy patients, particularly those with involved nodes (12). In 1975 Handley published an astonishing report indicating that 223 of 1000 patients with operable breast cancer undergoing internal mammary nodes dissection had metastatic disease in the mammary nodes at the time of mastectomy (3). Although most radiation oncologists had personal experience that indicated the trend toward improved survival in patients who received the benefit of post-operative irradiation, the widely held misconception at that time was that radiation therapy to the internal mammary and supraclavicular nodes did not improve survival. However, in 1976, Lacour published a landmark study which proved that radical mastectomy with dissection of the internal mammary nodes resulted in a 71% five year survival in patients with positive axillary nodes with medial quadrant T1 or T2 primaries, but radical mastectomy alone without internal mammary node dissection resulted in a 52% five year survival thus proving the validity and importance of therapy to the internal mammary node region (4). Fletcher proved the efficacy of radiation therapy with increased dose levels showing that 3,000 to 3,500 rads in four weeks resulted in a reduction to 7% recurrence in the supraclavicular nodes in axillary node-positive patients, while 4,500 to 5,000 rads in five weeks reduced that incidence to 1%. If post-operative irradiation is not given, 20-25% of patients with positive axillary nodes will relapse in the supraclavicular region (5). Thus there is definite proof that adequate doses as used today in the range of 4,500 to 5,000 rads in five weeks will eradicate virtually all subclinical disease (6). Further proof of improved survival rates with post-operative radiation therapy is documented by the report of the report of the NSABP study which showed that at five years those patients who were found to have four or more positive axillary nodes who received radiation therapy had a 28.4% survival, while controls without radiation therapy had only a 18% survival. Simultaneously the irradiated group showed only 1.5% regional recurrence against 12.5% regional recurrence in the unirradiated group (7). More evidence for increasing the survival rates was published by Montague and Fletcher who compared a cohort of radical mastectomy alone patients numbering 287 cases with 11.5% axillary nodes positive who had a 71.7% five year survival and a 54% 10 year survival. They described 356 other patients with radical mastectomy of whom 65.7% had positive microscopic disease in the axillary nodes all of whom had post-operative irradiation with a five year survival of 71.3% and a 10 year survival of 56% (8). These, as well as other studies, clearly demonstrate that there can no longer be any reasonable doubt about the ability of modern acceptable doses of radiation therapy to eradicate nodal disease and there is no longer any question that the eradication of nodal disease increases survival.

In regard to the control of local recurrence, many authors have proved that post-operative irradiation for a wide variety of cogent indicated reasons results in a low recurrence rate in regional nodes and chest wall. Weichselbaum published 354 cases which were given post-operative radiation therapy and the recurrence rate in regional nodes was 1% with chest wall recurrence of 5% (6). This compares favorably with the results published by Host, Wallgren, and others (9,10). Thus it can be definitely stated that it is relatively easy to prevent localized recurrence by adding radiation therapy in the immediate post-operative period as soon as the surgical incision is healed.

Another popular but erroneous belief was that post-operative radiation therapy to prevent local recurrence was unnecessary since it was believed that radiation therapy could rescue these patients later if their disease recurred. This was definitely found to be false, in fact, the irradiation of gross local and regional recurrent lesions has a high risk of failure as well as a higher risk of complications. Only approximately one half of those patients with local and regional recurrences can actually be controlled by radiation therapy as demonstrated by Montague and Fletcher in 1980 (8).

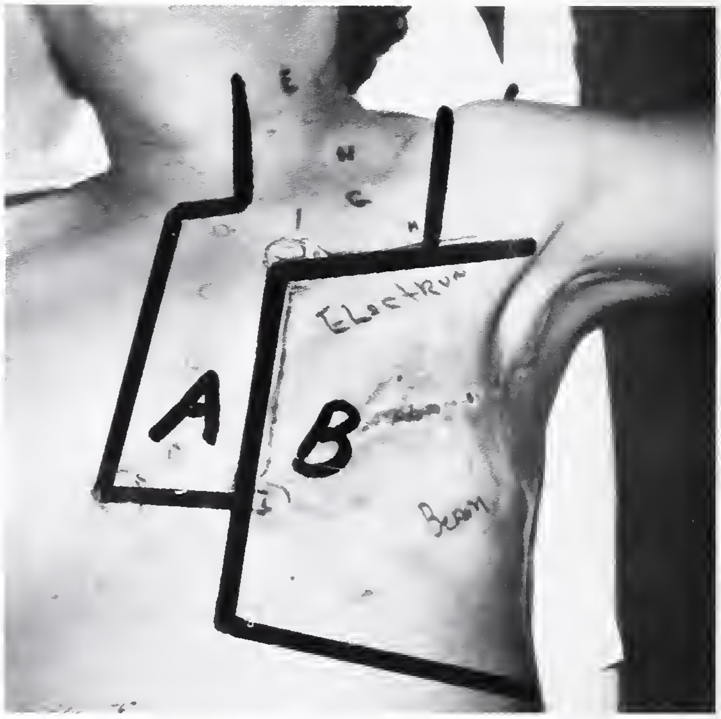

Figure 1. Typical electrom beam portals: A. Internal mammary-supraclavicular region using 9-13 million electron volt beam; B. Chest wall using 6-13 million electron volt beam according to patient anatomy thicknesses and tumor size, status, and depth. (20 million volt linear accelerator, Providence Hospital, Anchorage, Alaska.)

Current Theoretical Mechanisms of Local Recurrence

Predisposing causes of recurrence probably include: surgical transection of a distal extension of the primary malignant lesion, implantation of the wound from vessels incised at surgery, which continue to ooze either lymph or blood which is infested with viable tumor cells capable of embolization and reimplantation. In addition, there is interstitial motion of the tumor cells themselves or retrograde movement of malignant cells out to the operative wound edges (11,12,13). If these mechanisms of local recurrence occur in some of the patients receiving mastectomy then why not prevent it by preoperative irradiation. Wallgren, et al, showed that survival rates were significantly increased in both the preoperative and post-operative radiation therapy groups when compared with controls (10). Also if the radical mastectomy manipulation of tissues was responsible for recurrences, in part, then perhaps a less traumatic procedure was indicated. In fact, MacWhirter demonstrated in 1955 that a simple mastectomy followed by radiotherapy was equal to radical mastectomy in survival (14). It could be postulated that the rapidly performed simple mastectomy caused less disturbance in the chest wall and the addition of radiotherapy was of sufficient anti-tumor effect to offset the benefit ordinarily received from removing the nodes. This study has been corroborated by other investigators, and the prospective NSABP study also indicated that simple mastectomy and radiation therapy was a satisfactory alternative to radical mastectomy. On the other hand, if the surgical manipulation from the radical mastectomy was not the cause of some of

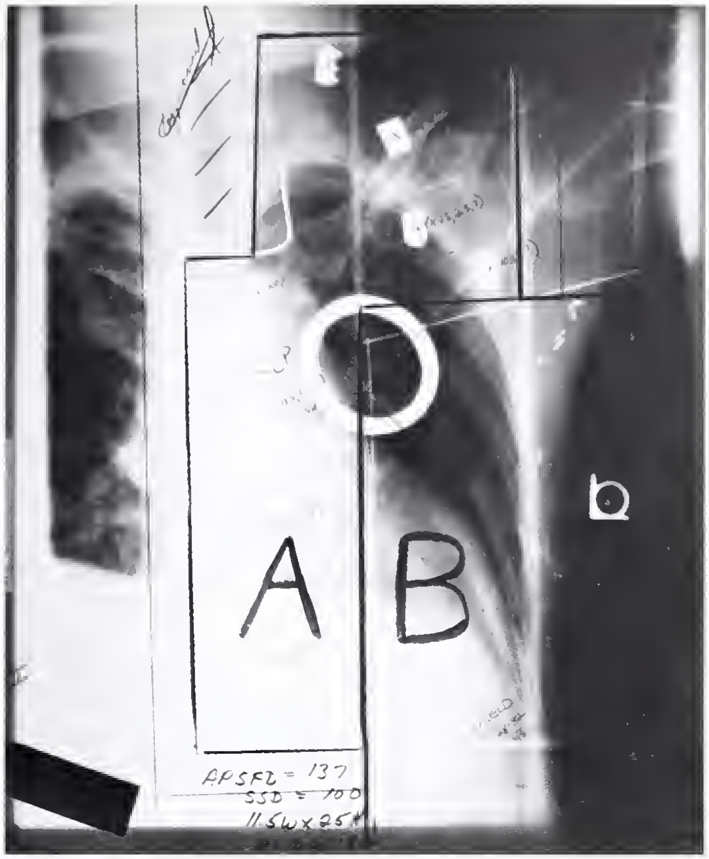

Figure 2. Simulator radiographs of electrom beam portals, A and B, shown in figure 1.

the recurrence, then perhaps the credit goes to post-operative radiation therapy for killing the majority of viable tumor cells in sufficient numbers to eradicate the disease completely or for a considerable length of time.

Logical Approach to Determining Postoperative Radiotherapy Indications

Moss's rationale differentiates the more favorable lesions from the less favorable group. More favorable lesions are small, with no regional metastases to nodes, no vascular or lymphatic invasion, low invasive potential, no pushing border, an increase in lymphocytic infiltration, a solitary primary without multiple foci, and a small primary located in the upper outer quadrants. Conversely, less favorable lesions are larger, that is, greater than 4 cm, with positive regional node metastases, vascular or lymphatic invasion, a high invasive potential demonstrated microscopically with a pushing border, little or no inflammatory lymphocyte response, multiple foci of origin, and location of lesions in the subareolar region or inner quadrants (11).

Haagensen's group showed that size is of extremely critical importance since lesions up to 1.5 cm in diameter have already metastasized to regional nodes in 38% of the patients, while lesions over 4.5 cm in diameter have already metastasized to regional nodes in 70% of the cases (15).

Some surgeons are reluctant to refer patients for post-operative irradiation because of the unwarranted fear of radiation carcinogenesis. Between 1959 and 1972, 1,234 patients with primary breast cancer were followed for the appearance of a second primary in the opposite breast. Of 287 patients with radical mastectomy alone, 51 cases, or 18% developed a second breast cancer in the opposite breast in the first five years post-mastectomy. Only 6 of 153 patients with excision plus irradiation, that is 4%, developed malignancy in the opposite breast. These data demonstrate unequivocally that the use of high dose curative radiotherapy not only is not conducive to developing another breast cancer in the remaining breast, but also that without high dose radiation therapy there is an over 4 fold increase in the development of malignancy in the opposite breast in the surgery alone group (13). Physicians and surgeons have an obligation to inform their patients that 5 year statistics show that the incidence of carcinogenesis in the opposite breast is over four times as high in patients who were denied the benefit of curative radiation therapy for primary breast cancer.

Indication for Preoperative Radiotherapy in Breast Cancer

In those patients with a locally non-resectable cancer with no distant metastases the entire region including the chest wall, breast, and regional nodes should receive radiotherapy to doses in the 5,000 rad range over five weeks, or higher doses may be indicated as well. Combination chemotherapy and hormonal manipulations should also be utilized. At 5,000 rads the patients are reevaluated and if their nonresectable tumor has become resectable, the patient and surgeon may elect to perform the mastectomy procedure. Preoperative radiotherapy is less likely to succeed in patients with hypoxic lesions and large necrotic masses ordinarily should be removed prior to radiotherapy (11,12,13).

Summary

Post-operative radiotherapy in breast cancer not only can improve the local and regional control rate but also significantly improves survival rates out to 10 years. Radiation therapy decreases the chance of developing a second breast cancer in the remaining breast to less than one fourth the incidence that occurs in cases treated with surgery alone. Whenever a less favorable situation occurs the patient should receive irradiation. Patients treated with post-operative radiotherapy have a 1% chance of recurrence in the supraclavicular nodes and a 5% chance of recurrence in the chest wall. All patients with subareolar or inner quadrant lesions should receive post-operative radiotherapy regardless of the size of the lesion and regardless of whether or not the axillary nodes are positive. The radiotherapist has only 50% chance of controlling recurrent disease, therefore the surgeon should discontinue the policy of waiting to see if disease ever recurs before referring the patient for radiotherapy. Even in patients with small outer quadrant lesions there is a 38% incidence of regional metastases, therefore the pathologist should make the surgeon aware of the danger signs when less favorable lesions are noted under the microscope whereby those patients can be referred for radiation therapy consultation. The use of adjuvant chemotherapy in these settings is still under study, and the medical oncologist and breast surgeon should be certain that the patient is made aware of the experimental nature of chemotherapy in this era when compared to the proved results that are currently available in using adjuvant radiation therapy as described in this article (16,17).

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ALASKAN WINTERS: A MENTAL HEALTH HAZARD?

Russ Christensen, M.S.

Among the characteristics of Alaska that contribute to the "last frontier" mystique are its remoteness, large size, small sparse population and its long cold dark winters which are commonly believed to produce "cabin fever" or winter depression.

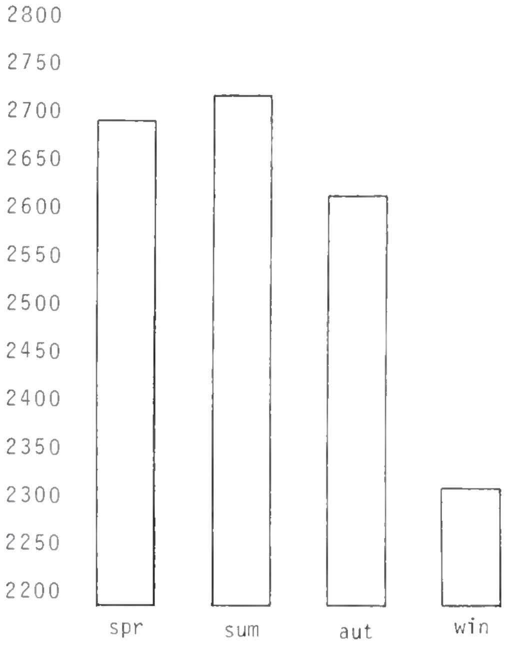
Around the turn of the century the term cabin fever was used to describe the mental problems which some of the isolated trappers and miners suffered when confined to their lonely cabins during the long winter night. With advances in communication and transportation the isolation has been greatly reduced but the term has become part of the folklore and mystique of the North and remains in common use.

The data for selected indicators of seasonal variations in stress provides little support for the popular belief that depression in Alaska is related to the long cold dark winter. Using the chi-square statistic three sets of Alaskan data for the three-year period 1978-1980 were analyzed: admissions to community mental health centers, admissions to the Alaska Psychiatric Institute and suicides.

Only state-wide community mental health center admissions (N = 10,317) yielded statistically significant seasonal differences ($p < .001$). Contrary to popular belief summer (June, July & August) was the peak season for admission during the three-year period with 2715, while winter (December, January & February) with 2301 was the season with the fewest admissions. Spring and autumn had 2695 and 2606 admissions respectively. There was considerable variation from year to year in peak seasons - spring in 1978, summer in 1979 and autumn in 1980. Winter had the lowest number of admissions for each of the three years.

Admissions to the Alaska Psychiatric Institute (N = 2,972) and state-side suicides (N = 184) did not yield statistically significant seasonal variations ($p < .20$).

On the basis of the above analysis of data it would appear that not only is the demand for counseling services in Alaska lowest during the winter but that the Alaskan winter has little direct impact upon psychotic breakdown and suicide.



Community Mental Health Center Admissions in Alaska 1978 -1980.

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MICA

All of us hear about that highly publicized $ million plus medical malpractice jury verdict, the controversial or highly disputed lawsuit either won or lost. What most of us don't hear is that fewer than 3% of all professional libility claims are ever defended through the trial level.

The majority of "medical malpractice" claims are resolved quietly behind the scene by decisions made within the insurance company. In the real world, the insurance company has become the "surrogate court." Some claims are withdrawn by the plaintiff in the early stages. Some are shown to be without appropriate legal cause and successfully denied. Other claims go through extensive legal discovery with one or more of the defendants dismissed voluntarily or by defense motions made to the court. Legitimate claims should be settled and often are. Regretfully, too often we see that non-meritorious or defensible claims are settled out of court or at the court house steps. Case by case it generally saves the insurance company dollars to buy out - that is a fact. Claims rarely get cheaper with time. But is this not "penny wise dollar foolish?"

Mica has and will aggressively defend all claims which are defensible. But good intentions are not enough - results are what count. From the moment a claim is reported to MICA, an extensive workup is done by an experienced and qualified medical liability investigator and claims manager. During this workup physicians are consulted for determining medical causation. The case is then referred to an independent group of physicians who can determine without legal implications the same issues as the "Expert Advisory Panel" appointed by the court when a lawsuit is pursued. Naturally, consent is required from the defendant physician to settle when appropriate, but above all else, the Claim Committee of the MICA Board - Alaskans and physicians like you - determine what happens on each claim. MICA brought back common sense to claims handling and that is why it works! More physicians in Alaska are insured with MICA - threefold over the next competitor. Maybe that says something in itself.

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PRESIDENT'S PAGE

I arrived in Cordova ten years ago from Denver to be the only physician. My initial concerns were far distant from medical associations and what I perceived as a group of physicians organized to protect their own turf. Certainly a number of non-member physicians feel that way even today. It also appeared to me that if I did a creditable job in my work out here in the country and gained the respect of my patients, I would enjoy a large measure of personal and professional independence. Unfortunately in 1972, a new era of governmental interests and control descended upon us all. They left few stones unturned and impacted physicians everywhere including we good guys minding our business out in the bush. I found myself pitted against cold indifferent bureaucrats who understood practically nothing of rural medicine, forcing me to comply with ridiculous hospital regulations and blatantly violating the rights of privacy of my patients.

Purely by accident I came in contact with the members of the ASMA and upon hearing of my personal battle with the government, they offered considerable help both in the form of financial support for court action and in the expertise of negotiation. Most of all, they offered a large measure of moral support. I was not a member of the Association but soon joined.

Many physicians in Alaska never end up in confrontation with others in matters that directly affect their physician-patient relationships or their professional independence. In part, it is because they are good doctors taking care of what needs to be done. What is often unrecognized is countless activities of their local, state, and national medical associations protecting these cherished rights. I am absolutely convinced that our medical associations are only organized groups that have prevented us from being totally socialized institutions. I an unaware as to how to persuade a non-member colleague to join the state association.

Professionally we are trained to analyze information, conclusions and decisions and then take some action. I would appeal to those persons who are not members to discuss the activities of the ASMA with a member, and then if they elect not join, it will be on the basis of a conscious decision. Financial support and personal participation in the ASMA is the best insurance policy that you can get to protect you freedom and independence.

The ASMA met in June in Fairbanks. Resolutions passed by the membership at this annual meeting may be found in the July/August issue of ALASKA MEDICINE. If you wish to have a copy of these Resolutions or background information feel free to contact the ASMA office.

I would like to finally say that I am looking forward to the year of close association with members of the ASMA, and hope I may make some small contribution to the betterment of our society and of medicine in Alaska.

Thank you,

Arthur D. Tilgner, M.D.
President, ASMA

It's no accident.

The fact that our area leads the nation in holding down health care costs is no accident. It's the direct result of voluntary health planning.

Physicians, hospital and clinic administrators and managers, governmental representatives and the public at large have worked together to produce a model health care system in Washington and Alaska. Even health care providers not directly involved in health planning have a say.

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We're proud of the success of voluntary health care planning in this area. We're pleased to be part of the process.

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PHYSICIAN SELF ASSESSMENT

Choose the most appropriate answer (1-8).

1. A 22 year old sexually active white female was seen in the office for her sixth urinary tract infection in the past six months. Workup in the past included a normal IVP and a negative cystoscopy. Urinalysis now shows too numerous to count white cells and 4+ bacilluria.
The best approach now would consist of:
a) No therapy other than oral fluids and post-coital voiding since urinary tract infections are a self-limited disease.
b) Three months of therapy with an antibiotic to which the cultured organisms are sensitive.
c) Short course antibiotic therapy followed by chronic suppression for 6 to 12 months.
d) Buy a blue ticket to the Lower 48.
e) Repeat an IVP and cysto after the current infection is eradicated.

2. A 24 year old white female juvenile onset insulin dependent diabetic retinopathy has a urinalysis showing 3+ albuminuria for the first time. Which of the following statements is most likely true?
a) The patient has an active urinary tract infection.
b) The patient has developed nephrotic syndrome.
c) The patient is likely to develop end stage renal disease in 3-5 years.
d) The patient has developed insulin anti-insulin immune complex nephropathy.
e) Proteinuria will diminish as renal function worsens.

3. A 42 year old white female who is complaining of polydipsia and polyuria is found to have a blood pressure of 180/110 on several occasions. Overnight first void UA shows a specific gravity of 1.008 and is otherwise benign. Working diagnosis at this point is most likely:
a) Essential hypertension.
b) Diabetic nephropathy with hypertension.
c) Conn's syndrome.
d) Pheochromocytoma.
e) Graves' disease

4. Ideal qualities for a beta blocking agent used in the treatment of hypertension include all but:
a) Low cost.
b) Once/twice daily administration.
c) Rapid "first pass" hepatic metabolism.
d) High Beta 1 to Beta 2 effects.
e) Water solubility.

5. A 72 year old male with presumed essential hypertension controlled on Hydrochlorothiazide (50 mg per day) and Inderal (40 mg b.i.d.) is seen in the office complaining of inability to sleep and nightmares.
The most likely diagnosis is:
a) Hypokalemia.
b) Cerebrovasculay insufficiency secondary to "relative hypotension".
c) Inderal toxicity.
d) Diuretic induced hyponatremia.
e) Pheochromocytoma.

6. Causes of a decreased anion gap include all but the following:
a) Hypoalbuminemia.
b) Multiple myeloma.
c) Laboratory error.
d) Renal failure.
e) Bromide intoxication.

7. A 40 year old nurse arrives in the Emergency Room in coma. A fruity odor is noted to her breath. Her electrolytes and blood sugar return normal. Ketones are strongly positive in the urine and in the blood.
The mostly likely diagnosis is:
a) Diabetic ketoacidosis.
b) Aspirin intoxication.
c) Rubbing alcohol intoxication.
d) Sterno ingestion.
e) Primary CNS event.

8. A colleague asks your opinion about the following set of blood gases and electrolytes.

Blood gases:	pH 7.40	Sodium 135
	pCO_2 40	Potassium 3.8
	pO_2 90	Chloride 60
	Base excess 0	CO_2 25

(Both sets were repeated)

You respond:
a) An obvious laboratory error.
b) The patient has severe metabolic acidosis and severe metabolic alkalosis.
c) The patient has severe respiratory acidosis and severe metabolic acidosis.
d) The patient has respiratory acidosis and metabolic alkalosis.
e) I have no idea.

Choose the most appropriate answers (9-10).

9. A 22 year old black female with a 2 year history of active systemic lupus erythematosus and biopsy

proven diffuse proliferative glomerulonephritis is admitted with pleuritis, joint pain, active urinary sediment and a rising creatinine despite Prednisone 100 mg per day.

Appropriate therapy at this point would include:

a) Addition of an immunosuppressive agent such as Imuran or Cytoxan.
b) Plasmapheresis.
c) Pulse Solu-Medrol IV.
d) Begin Plaquenil and aspirin.
e) Emergent bilateral nephrectomy.

10. A 29 year old white male is found to have hypertension on multiple out patient blood pressure determinations. His hypertensive screening workup is negative.

Reasonable first line drugs must include:

a) Thiazide diuretic.
b) Furosemide.
c) Beta blocking agent.
d) Hydralazine.
e) Alpha Methyldopa.
f) Captopril.

True or False (11-14)

11. In the past 5 years kidney graft survival has improved dramatically because of improved patient selection and better understanding of immunosuppressive therapy.

12. A 30 year old white female has the following electrolytes:

Sodium 140 Chloride 100
Potassium 4.0 CO_2 20

A diagnosis of primary metabolic acidosis can be made.

13. Peritoneal dialysis has proved to be an ineffective method for long term treatment of chronic renal failure.

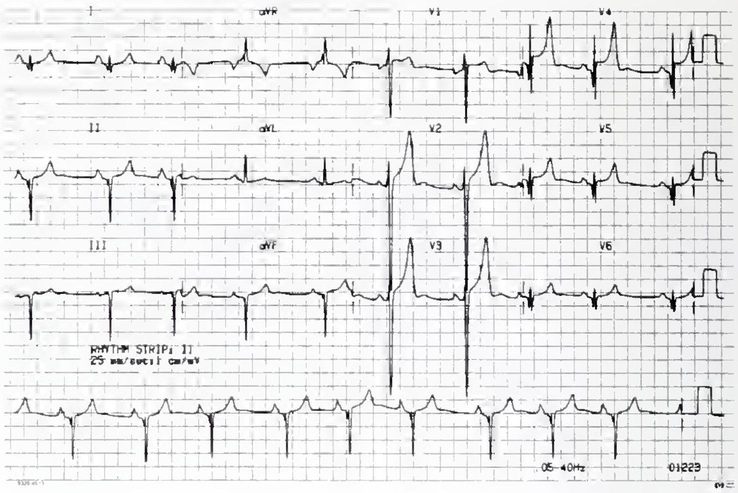
14. Rising serum ketones in a patient receiving insulin and fluids for in-hospital therapy of diabetic ketoacidosis whose blood sugar is falling indicate worsening acidosis.

EKG OF THE MONTH

This electrocardiogram was obtained during the examination of an 18 year old school boy. Aside from a systolic ejection murmur along the left sternal border, no other abnormalities existed. He had no symptoms. His mother stated that heart murmurs had been heard from time to time during school exams. He had no other unusual aspects to his history.

1) What is the most likely diagnosis that accounts for the heart murmur, age of the youth, and electrocardiogram?

2) What next examination would confirm this diagnosis?



X-RAY OF THE MONTH

The patient is a 23 year old male who presents with a two year history of burning chest pain and frequent regurgitation. For the past six months the patient has had decreased symptoms of reflux with increasing dysphagia.

What is your diagnosis upon review of the three films?

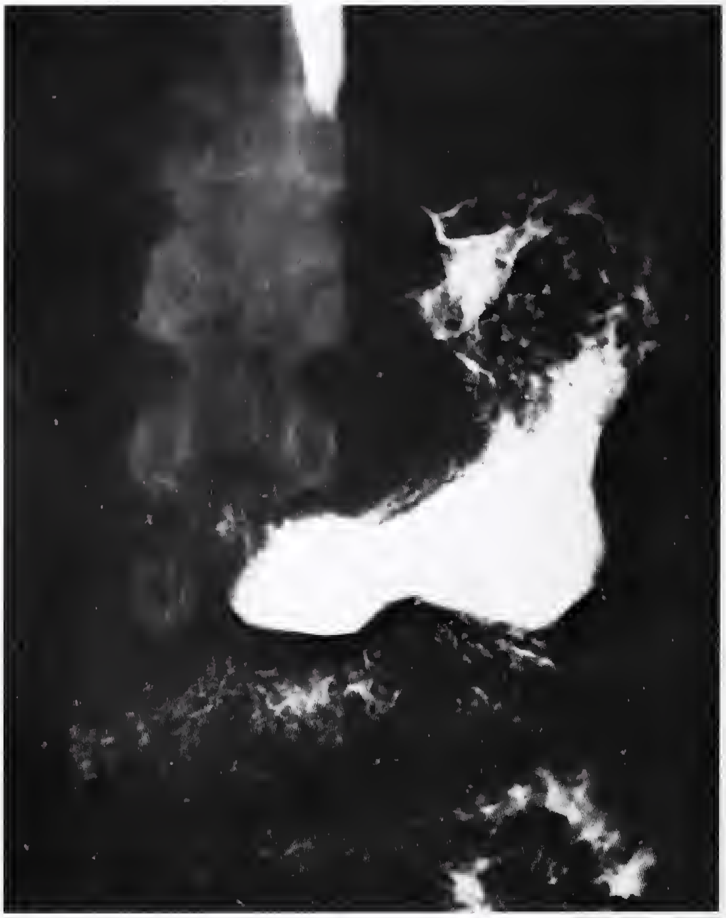


Figure 1

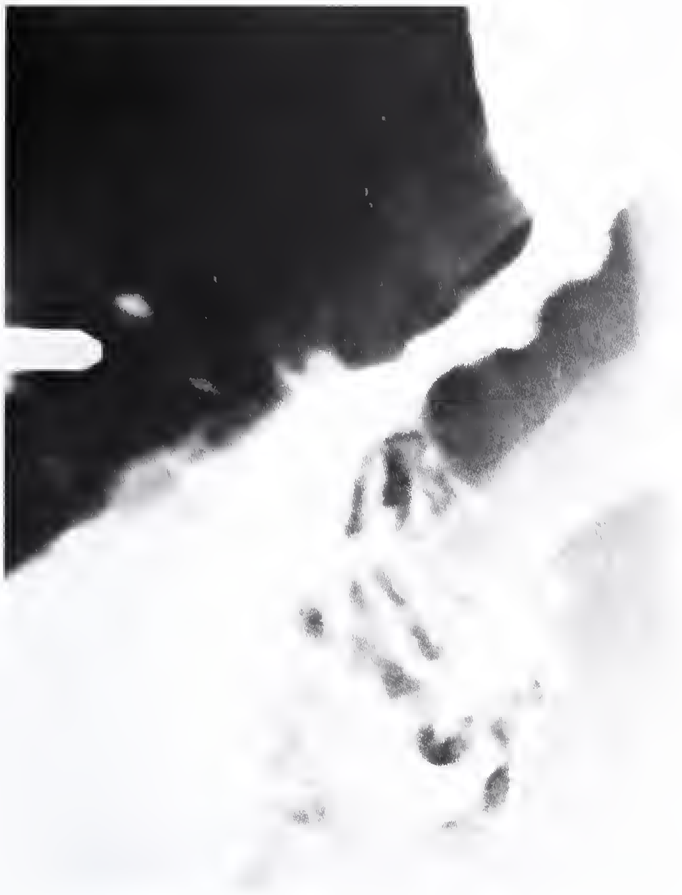


Figure 2

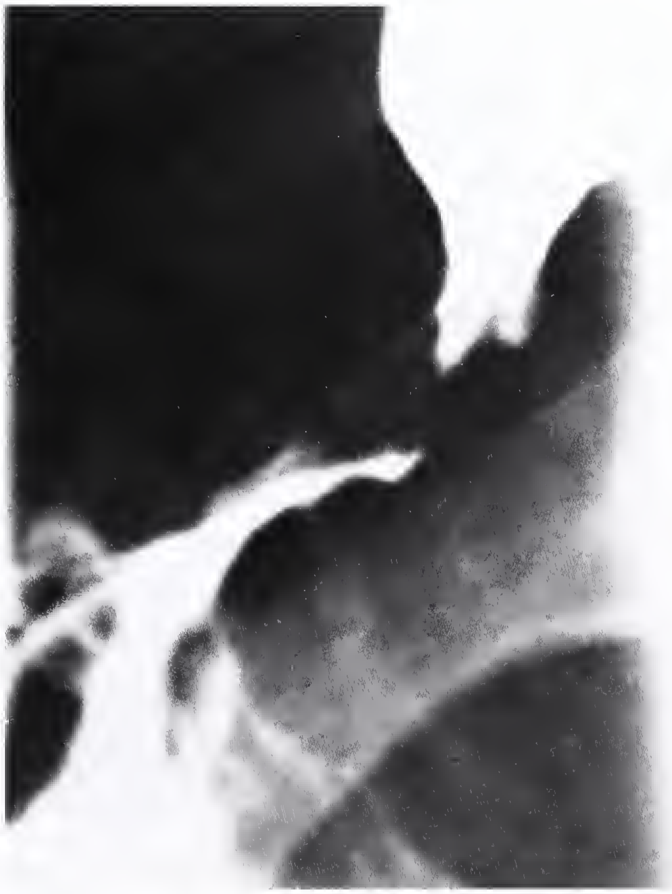


Figure 3

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AUXILIARY NEWS

STATE NEWS

This June the Alaska State Medical Association Auxiliary marked its thirty-second anniversary. Alaska's first medical auxiliary was organized during the annual meeting of the Territorial Medical Society held August 19, 1950 at Mount McKinley Lodge. These charter members believed that as an organized body they could better support the medical profession of Alaska and contribute to the health education throughout the state and nation.

Since that first meeting thirty-two years ago physician spouses around the state and nation have continued to give an untold number of community service hours through their medical auxiliaries.

As our state membership continues to increase so will our ability to function as a viable organization. Won't you please join us this year and help us make the Alaska State Medical Association Auxiliary an effective force within the state. Your support will be greatly appreciated by those members willing and able to contribute their time and energy. Your dues and support assures better representation for Alaska on local, state and national levels. Please join, your support really counts!

From our past . . . Alaska State Medical Association Auxiliary

Pictured below are the Charter Members of The Alaska Territorial Medical Society Auxiliary. This picture from the past was taken in 1951. How many can you recognize?

Pictured left to right beginning with the back row: 1. Mrs. Asa Martin, Anchorage; 2. Mrs.Owen Cranmer, Fairbanks; 3. Mrs. Carl Jensen, Seattle -- Honorary Member; 4. Mrs. Milo Fritz, Anchorage; 5. Mrs. William P. Blandon, Juneau; 6. Mrs. Howard Romig, Anchorage; 7. Mrs. A. S. Walkowski, Anchorage; 8. Mrs. Thomas Brandon, Anchorage; 9. Mrs. J. O. Rude, Juneau; 10. Mrs. C. C. Carter, Juneau; 11. Mrs. Arther Schiable, Fairbanks; 12. Mrs. A. Holmes Johnson, Kodiak; 13. Mrs. George Davis, Anchorage.

Cookbooks for sale

Less than 500 Cookbooks remain to be sold! Cookbooks continue to sell but not at the brisk pace of one year ago. Please help us to complete this worthwhile project by selling one (or more!) cookbooks to your neighbors and friends. After these remaining books are sold our cookbook will most likely be laid to rest. Your support and enthusiasm has been much appreciated. Remember, $5 of the $8.50 total cost is tax deductible as it is applied to the Alaska State Medical Society Scholarship Fund. These cookbooks make great gifts for the office staff, especially at Christmas. Cookbooks are available through the following members and locations:

ANCHORAGE
ASMA Office - 4107 Laurel Street
Northway Mall Multicrafts - Mary Cassell
Susan Bowers - 6215 Eastwood Ct., 99504
337-5191
CORDOVA
JoAnn Tilgner - Box 218, Cordova, 424-7121
FAIRBANKS
Gail Thieman, 456-3700
JUNEAU
Marge Hedges - P.O. Box 609, 586-6049

Cookbook price $8.50 - add $1 for mailing for first book, $.50 for additional books.

ANCHORAGE NEWS

If you happen to be in the Anchorage area on one of these dates and wish to join us as a guest, please do! Call the Medical Society Office for more information. If transportation is a problem someone will contact you for transportation arrangements. Please call the Medical Society Office and they will forward your message.

Anchorage Medical Society Auxiliary Calendar

September 16	Membership Salad Luncheon
October 9	Potluck Dinner to benefit AMA-ERF
October 14	Kickoff Program (am) for Child-Safety Seat Project
November 11	Studio Demonstration and Luncheon at the home of Marianne Wieland, Artist and Medical Wife
December 5	Annual Joint Christmas Dinner with the Anchorage Medical Society to be held at the Anchorage Sheraton
December 16	Annual Christmas Tea

Marge Muzzall
President, ASMAA

STETHESCOOPS
by the STETHESNOOPS

Dr. Lillibridge was seen carrying a large number of emesis basins from Providence recently. Do all pediatric gastroenterologists provide such playthings for their patients?

Recently we visited Bob Whaley and he scurried around taking dozens of mouse traps off his chairs - to keep the dogs off, he SAYS. His obliging spouse, Dr. Jean revealed he got caught in his own trap. Something we snoops would never let happen.

Deep delving has divulged three of our lady doctors proposed their husbands names as members to the Auxiliary. We would like to hear more about this and if those husbands are going to hold a tea soon.

Dr. Dick Sutherland and his wife are up to their rafters in remodeling.

The Anchorage Auxiliary held a huge garage sale in September. (Everybody knows who picked over the selections first.) It will be interesting to see who's wearing whose in the coming months.

Dr. Don Rooney (Juneau) married an Anchorage girl. Any bets on how they will vote on the capital move?

The Joe Chandlers didn't make it to the convention because of "sewer problems" . . . only in Alaska.

And we never have had a follow-up from Dr. Ferucci on those "fishy" placenta plans, either.

A well trained internist is rumored to be leaving a major clinic in Fairbanks.

Major clinics have trouble holding their members, and the Denali Clinic is no exception. It closed its satellite in Anchorage.

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The Physician's Sleep Glossary

Some common sleep laboratory terms

poly•som•no•graph. An instrument which simultaneously records by electrodes physiological variables during sleep—for example, brain activity (EEG), eye movements (EOG), muscle tonus (EMG) and other electrophysiological variables. These readings indicate precisely when patients fall asleep, how many wake periods they experience, the quality of sleep and the duration of sleep.

sleep la•ten•cy. The period of time measured from "lights out," or bedtime, to the commencement or onset of sleep.

wake time af•ter sleep on•set. Intervals of time spent awake between onset of sleep and the end of the sleep period. The polysomnograph registers the length and frequency of the intervals.

to•tal sleep time. The amount of time actually spent in sleeping. This is estimated by subtracting wake times from the period encompassed by the onset and the termination of sleep.[1]

REM/NREM. 1. REM, or rapid eye movement, sleep is "active"—characterized by increased metabolic rates, elevated temperature and arousal-type EEG patterns. 2. NREM, or non-rapid eye movement, sleep represents "quiet" sleep stages. There are four distinct stages of NREM sleep.[2]

re•bound in•som•nia. A statistically significant worsening of sleep compared to baseline on the nights immediately following discontinuation of sleep medication.[3]

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Efficacy objectively demonstrated in the sleep laboratory—the most valid environment for measuring hypnotic efficacy.

In numerous sleep laboratory investigations patients fell asleep sooner, slept longer and woke up less during the night[3-12] with

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Compared with temazepam and other hypnotics, onset of sleep is more rapid[4] with

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More total sleep time on nights 12 to 14 of therapy[4] and continued efficacy for up to 28 nights[5] with

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The efficacy of Dalmane has been studied in over 200 clinical trials with more than 10,000 patients.[3-15] During long-term therapy, which is rarely required, periodic blood, kidney and liver function tests should be performed. Contraindicated in patients who are pregnant or hypersensitive to flurazepam.

Please see summary of product information on following page.

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Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; in acute or chronic medical situations requiring restful sleep. Objective sleep laboratory data have shown effectiveness for at least 28 consecutive nights of administration. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended. Repeated therapy should only be undertaken with appropriate patient evaluation.

Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patient to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg recommended initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.

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November 12, 13	**Antibiotic Treatment of Gram-Negative Sepsis**
November 19, 20	**Gastroenterology Conference**

The schedule listed here gives provisional dates and titles which will probably undergo further changes. However, it is unlikely that events will be added.

January 21, 22	**Recent Advances in Neuroscience**
February 11, 12	**Symposium on Headache**
March 19, 20	**Thermal Injury and the Immunoregulatory Response**
March 24-26	**Perinatal Symposium**
April 15, 16	**Sports Medicine**
May 27, 28	**Otitis Media in the Child**
June 20-22	**Critical Care Medicine Symposium**
August 11, 12	**Summer Update Conference/ Obstetrics & Gynecology**
September 23-25	**Thermal Conference**
October 7, 8	**Cardiology for Non-Cardiologists**
November 25, 26	**Diseases of the Eye and Skin**
December 9, 10	**Computers and Microprocessors for the Physician's Office**

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EDITORIAL COMMENT

WELL, MAYBE

Elsewhere in this issue Dr. Charles Sternhagen presses forcibly his case that postoperative radiation is beneficial and desirable following mastectomy. He opens with the assertion that, because survival is improved, radiation is essential for women with positive nodes; he closes stating that this is proved!!, citing two personal communications as references. These are strong statements. They might be acceptable, if uncontested. However that is hardly the case (1,2,3,4). There are those who argue in fact precisely the opposite, that postoperative radiation decreases survival.

Breast cancer is probably the most emotionally charged disease in America. Multiple therapeutic options and controversies now confront, confuse and frighten these women. We must be certain that at the least they are presented with valid objective choices.

Until the, possibly unfortunate, arrival of adjuvant chemotherapy, surgery and/or radiotheraphy were the only treatments for primary breast cancer. The voluminous literature extolling the achievements of each discipline tended to ignore the realities; no matter what was done a majority of women continued to die of disseminated cancer, beyond the reach of the most radical surgery or radiation, with the same depressing regularity; the mortality remained the same decade after decade. The reason of course was obvious, if unpalatable. Radiotherapy and surgery were at a dead end and had been from the start. Anyone now advising post-mastectomy radiotherapy must face up to it.

At mastectomy women must fall into two main categories, or, possibly, a third. 1) The surgeon can and will remove all the cancer; radiation obviously cannot improve survival of these fortunate women. 2) Systemic metastases are present and the disease will eventually recur; other than a possible effect on local recurrence, which we will address shortly, radiation, again obviously, cannot improve survival. So, what is left?

There is a third, remote, possibility. Undisseminated cancer might lie outside the scope of radical surgery but still be accessible by radiation. But, all the modern literature on the biology of breast cancer and the rationale for adjuvant chemotherapy contradicts this thesis. Such a situation, if it exists at all, must be vanishingly rare, and could never be identified or proven. It remains at best a fanciful argument in support of radiation.

Regardless of any statistics, one must wonder: who could any increased survivors possibly be? Perhaps we affect local recurrence? If so, what about local recurrence?

The literature does indeed support a modest reduction in the rate of local recurrence after radiotherapy. Having said this, the problem here is: so what? Almost nobody dies from local recurrence, alone; it can be an awful therapeutic nuisance. It clearly is a problem. But how big? Is the indescriminate prophylactic radiation of all women with positive nodes the only approach?

Depending upon stage and surgery, from 10% to 25% will recur locally or regionally. Essentially all of these will already have distant disseminated metastases and will die because of them. It would seen reasonable to treat this small minority at the time of recurrence instead of prophylactically treating all women with positive nodes. Radiotherapists, however, contend that only some 50% of local recurrences can be effectively treated. Again, not all agree (1). These figures for treatment failure of locally recurrent disease, however, stem from Halstedian days when the recurrence often involved the skin flap, a marginally vascular sheet of parchment plastered onto the ribs. A hideous radiotherapeutic target. Nowdays this is rarely encountered. Therefore, even if these pessimistic figures are accurate, the maximum palliative gain from post-operative therapy is paltry.

Moreover, local recurrence in the radiation field is not rare and then presents a largely untreatable disaster. Occasionally, recurrence is only or predominately in the actual radiation field. The implications of this downplayed phenomenon should be sobering for radiotherapy proponents. Even palliative gain begins to approach zero.

If a treatment is relatively harmless and inexpensive, low therapeutic efficacy is acceptable; on the other hand, if highly effective, we can pay the price of considerable morbidity and expense.

So, we must confront morbidity . . . and cost. Apart from the inconvenience and discomfort of 5 weeks of treatment, numerous blood tests and x-rays, the incidence of arm edema from radiation following axillary dissection is considerable. Compounding this, is adjuvant chemotherapy, useful or not, which almost all women with positive nodes may now expect. The spectre of secondary malignancies and leukemia, induced by combined radiation and alkylating chemotherapy, is now emerging. This underlines the requirement that these treatments are of undoubted effectiveness.

Some 60,000 women will develop breast cancer every year. If only half of these women are radiated at an average cost of $^{\$}3000$ the annual bill would approach $^{\$}100,000,000$. For this we appear to save no one and only marginally benefit a small minority.

The case for post-mastectomy radiotherapy in the absence of demonstrable residual disease does not to fulfill either criterion for justifiable therapy; therefore, it is difficult to support. If, in fact, we are offering, not help, but only hope, we face a serious ethical problem.

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**Note: The references cited all contain numerous supporting references omitted here to conserve space.

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ANSWERS to PHYSICIAN SELF ASSESSMENT

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ANSWER to X-RAY OF THE MONTH

Differential Diagnosis: Benign peptic stricture
Neoplasm at C-E junction
Achalasia

The upper GI films demonstrate a persistent narrowing of the distal esophagus. The esophagus motility proximally is within normal limits. Some mucosal irregularity is identified on the spot films with what appear to be one or two ulcerations.

The most likely diagnosis given the clinical history and the patient's age is a benign stricture from recurrent reflux esophagitis. The radiographic appearance is not typical for achalasia. A much less likely consideration in view of the patient's age is a neoplastic process.

Neoplasms in the esophagogastric junction can be quite difficult to diagnose and differentiate from benign stricture secondary to peptic esophagitis. Careful evaluation of the radiographs, in particular the spot films, demonstrates the transition between normal esophagus and constricting lesion to be quite abrupt. The small ulcerations within the lesion are also suggestive of neoplastic process although ulcerations can certainly occur in peptic esophagitis. At biopsy the lesion proved to be an adenocarcinoma of the gastroesophageal junction. This is an extremely rare lesion in a patient of this age. It typically occurs in the sixth or seventh decade of life.

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ANSWER to EKG OF THE MONTH

1) Idiopathic hypertrophic subaortic stenosis is the single entity which would tie together the history, physical findings and electrocardiogram. The two most stricking features of this EKG are a) the large precordial voltages suggesting left ventricular hypertrophy, and b) the exaggerated Q waves in I, II, AVL and lateral precordial leads. This pseudo-infarction pattern of the inferiolateral Q waves is thought to be generated by the septal hypertrophy seen in hypertrophic subaortic stenosis. The large precordial voltage is a result of the hypertrophy of the free walls of the left ventricle. Another feature of the EKG seen here and also commonly seen in hypertrophic subaortic stenosis is the large voltage of the P wave. This is thought to be caused by atrial hypertrophy as well, possibly as a result of the stiffening of the left ventricle and higher pressures needed to fill it.

2) Suspect idiopathic hypertrophic subaortic stenosis when a young person with a systolic ejection murmur has large septal Q waves and evidence for LVH on the electrocardiogram. The diagnosis can be established by obtaining an echocardiogram.

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(trimethoprim and sulfamethoxazole/Roche)

succeeds

Bactrim is useful for the following infections when due to susceptible strains of indicated organisms (see indications section in summary of product information):

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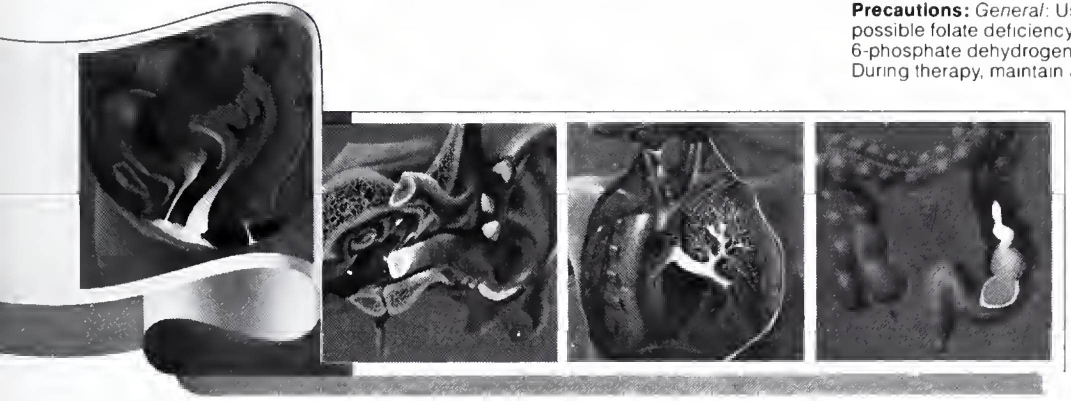

in recurrent UTI...
a continuing record of high clinical effectiveness against common uropathogens

in acute otitis media in children...
effective against both major otic pathogens...with *b.i.d.* convenience

in acute exacerbations of chronic bronchitis in adults...
clears the sputum and lowers its volume...on *b.i.d.* dosage

in shigellosis...
faster relief of diarrhea than with ampicillin[2]

BACTRIM™ (trimethoprim and sulfamethoxazole/Roche)
Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note*. The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted

Precautions: *General*: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin, reassess coagulation time when administering Bactrim to these patients

Pregnancy Teratogenic Effects. Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias*: Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis *Gastrointestinal reactions* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea, pseudomembranous colitis and pancreatitis *CNS reactions*: Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness *Miscellaneous reactions*: Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp (20 ml) b i d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis

Children. Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis

For patients with renal impairment Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS:

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Supplied: *Double Strength (DS) tablets*, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100, Tel-E-Dose® packages of 100; Prescription Paks of 20 and 28 *Tablets*, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500, Tel-E-Dose® packages of 100, Prescription Paks of 40 *Pediatric Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry flavored—bottles of 100 ml and 16 oz (1 pint). *Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint)

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1. Rubin RH, Swartz MN: *N Engl J Med 303* 426-432, Aug 21, 1980. 2. Data on file, Medical Department, Hoffmann-La Roche Inc.

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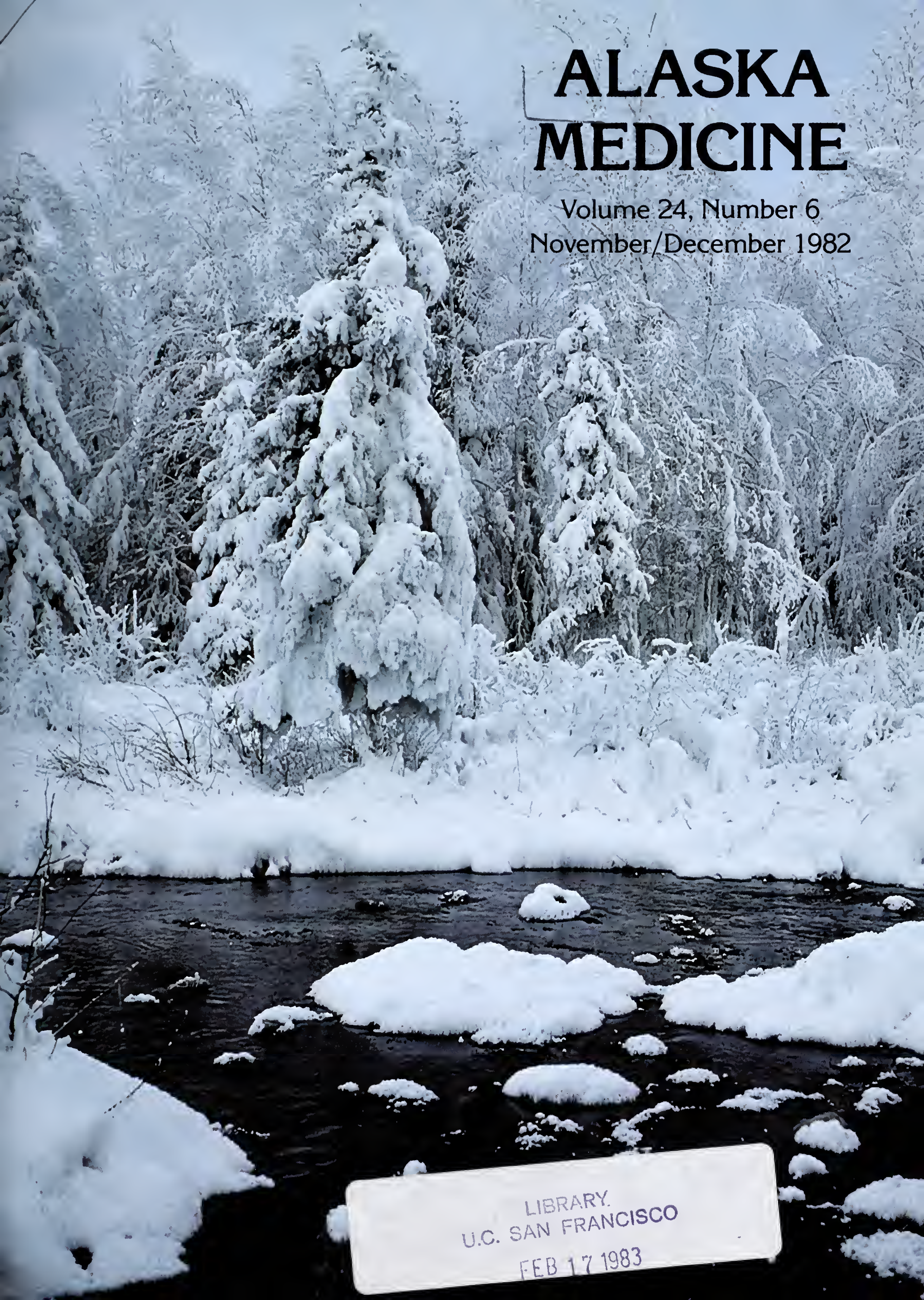
ALASKA MEDICINE

Volume 24, Number 6
November/December 1982



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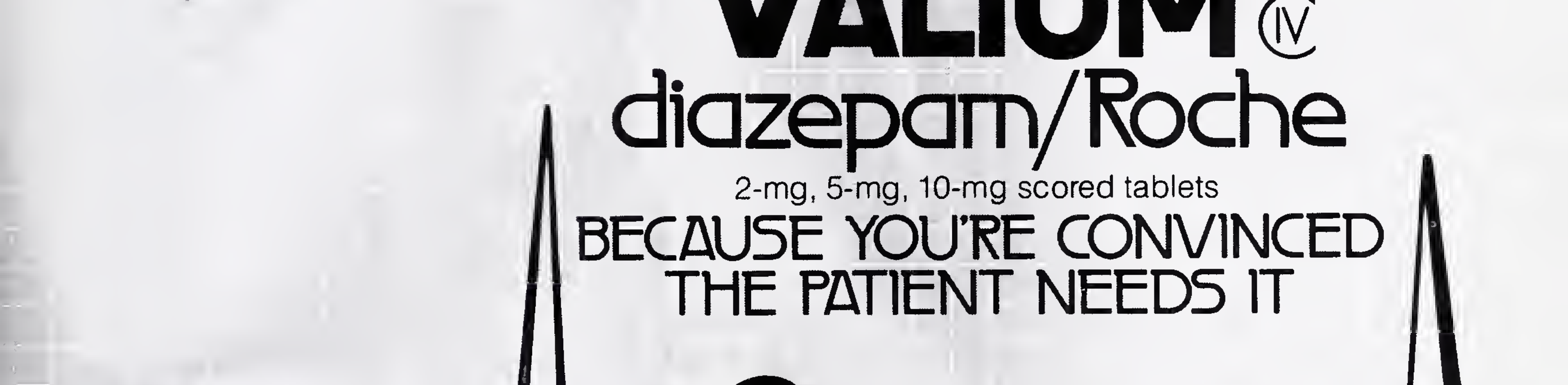

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Please see summary of product information on the following page.

VALIUM®(diazepam/Roche)

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Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).
The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.
Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy
Warnings: Not of value in psychotic patients Caution against hazardous occupations requiring complete mental alertness When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures Advise against simultaneous ingestion of alcohol and other CNS depressants Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months After extended therapy, gradually taper dosage Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

***Usage in Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.
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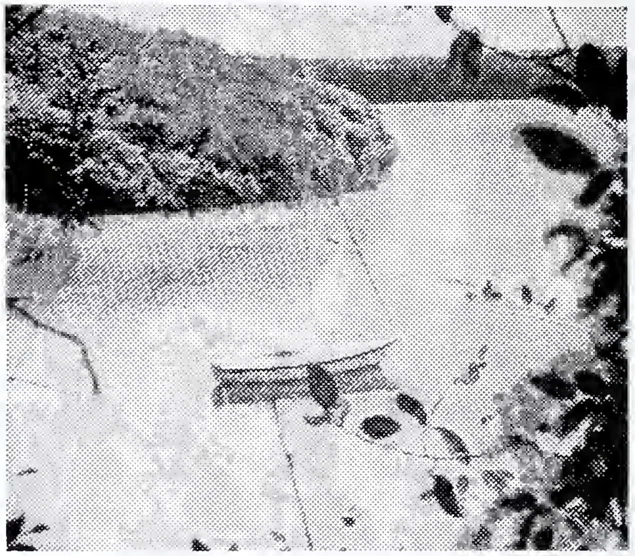

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ALASKA MEDICINE

Official Journal of the Alaska State Medical Association

4107 Laurel, Anchorage, Alaska 99504

Volume 24 November/December 1982 Number 6

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ALASKA MEDICINE is the bi-monthly journal of the Alaska State Medical Association; Alaska Medicine, 4107 Laurel, Anchorage, Alaska 99504. *ALASKA MEDICINE* is printed by Northern Printing Co., Inc., 655 Warehouse Avenue, Anchorage, Alaska 99501. Copyright 1982 Alaska State Medical Association.

About the cover: *Russian Jack's Springs* by Wm. H. Bowers, M.D.

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ANDREW SKIN SR.: ESKIMO DOCTOR

Scott Kirchner

Abstract

This paper describes the methods and techniques used by Andrew Skin, Sr., an Eskimo Doctor from Selawik, Alaska. Mr. Skin's background, training and relationship to other forms of health care delivery in the region are discussed. Procedures used by Mr. Skin to manipulate internal organs, treat "blood blocks" and correct dislocated joints are described, as well as medicinal remedies. Patients who were interviewed during and after treatment indicated a high level of patient satisfaction.

Introduction

The Eskimo population of northwest Alaska existed as an independent society prior to the arrival of the White man. New lifestyles, ethics and diseases heralded the introduction of Western culture at the end of the Nineteenth Century. Methods that had been satisfactory for containing disease among Eskimos became outdated and reliance upon White medical methods increased. Although substantial provisions have been made for medical treatment of Native Americans through the U.S. Public Health Service, Western medical methods have not always been sufficient to deal with the wide range of illness encountered. Rural communities often regard Western medical intervention as an imposition, rather than an asset, unless the visiting health care workers are sensitive to pre-existing methods of treating sickness. For this reason, it is important that Western-trained medical practitioners working in cross-cultural settings become familiar with Native healing styles and their underlying theories.

In the last decade, traditional Native healing techniques have become increasingly relevant to the health of Eskimo people. In the past, knowledge of these techniques was passed on through oral tradition. However, in recent years, a few attempts have been made to record the knowledge of elder Eskimos who still practice traditional healing methods. The Mauneluk Cultural Heritage Program published **Timinun Mamirrutit** (1976), a booklet which contains the descriptions of traditional Eskimo healing methods as told by Minnie Gray, Bertha Sheldon, Arthur Douglas, Sr., Mamie Beaver and Lulu Geary. In other published documents, Keats, Lucier and Vanstone (1976) and Juul-Fountain (1979) have described the healing practices of Della Keats, a traditional healer or tribal doctor who works primarily in Kotzebue, a town of 2,044 people in northwest Alaska.(2)

Northwest Alaska also contains ten villages (pop.55-490). In the villages, health care is available from the Community Health Practitioner and a number of elder Eskimos who are referred to as "Eskimo Doctors". Community health practitioners are the primary source of Western-based health care in the villages. They practice under the supervision of Indian Health Service physicians located in Kotzebue and their methods are based in Western medical theory. Eskimo Doctors use a variety of manipulative techniques to treat abdominal aches and pains, joint dislocations, and various other ailments. The theoretical basis of their methods combines physiology, Western medicine and Eskimo traditions. This paper describes the techniques and underlying theory of a village-based Eskimo doctor, Andrew Skin Sr., who has been treating people in his hometown of Selawik, Alaska, for twenty-one years.

Selawik is located about seventy-five miles inland from Kotzebue Sound and slightly north of the Arctic Circle. From Kotzebue,the regional center and location of the closest hospital, Selawik is about forty-five minutes by plane. The village is geographically split into three parts. People live along both banks of the Selawik River and also reside on an island in the middle of the river. Transportation in the village is by boat in the summer and by snow machine in the winter. All but a few of Selawik's 361 residents are Eskimo. Fish and caribou are primary sources of food. Subsistence activities such as fishing and hunting occupy much of the villagers' time.

The primary health care providers in the village of

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Selawik are Emma Ramoth and Mildred Foster, who are Community Health Practitioners, and Andrew Skin Sr. the Eskimo Doctor. Although they work quite independently there is much cooperation between them. In fact they refer patients to each other. Ms. Ramoth refers patients to Mr. Skin when she feels that his style of care is better suited to an individual's problem. On the other hand if Mr. Skin finds a person that has the symptoms of appendicitis he will refer the person to Ms. Ramoth so that the patient can be flown to the PHS hospital in Kotzebue.

Mr. Skin allowed me to stay at his home in Selawik from July 7 to July 24, 1981. Although it was the first time he had served as an instructor to a medical student, he cheerfully accepted the role. He was a capable and confident teacher. This paper documents the information which was passed to me by Mr. Skin.

Personal History

Andrew Skin Sr. was born in Selawik on December 30, 1914. When he was eleven years old his grandfather bought a sixty-foot two-masted schooner used for trading on the Selawik River and in Kotzebue Sound. At the age of twelve Andrew was taught by his father, Tom Skin, to work as an oiler on the family boat. By the time he was thirteen, he had made three or four trips to the coast. Later, he was trained as captain. He spent a total of forty-two years working on various inboard watercraft -- a detailed account of the trading routes of the schooners in the Selawik area in the 1920's has been published by Anderson (1974).

In 1939, Andrew Skin Sr. married Vera Mitchell, also from Selawik. They had fifteen children, of whom twelve are alive and four are currently living in Selawik. From 1952-1961, Mr. Skin worked as a reindeer herder. By raising and slaughtering reindeer he gained a practical familiarity with the circulatory system and general anatomy. This background may have contributed to his theories of blood flow which are discussed later.

In August 1959, while he was a reindeer herder, Mr. Skin had painful abdominal cramps. He sought the help of Della Keats, a well known Eskimo Doctor who resides in Kotzebue. Ms. Keats succeeded in treating Mr. Skin and inspired him to help others by using similar techniques.

Since June 11, 1979, Mr. Skin has been working for Maniilaq (3), a non-profit native corporation that also sponsors Della Keats and Rose Ella Stone (Point Hope Eskimo Doctor). Mr. Skin was chosen to be Selawik's Eskimo Doctor by a majority vote of the Selawik City Council. As part of his job, he travels to the five villages in the Kobuk River valley (Kiana, Noorvik, Ambler, Shungnak and Kobuk) to treat patients. Sometimes he is also called to treat patients in Kotzebue. Mr. Skin has taken first aid classes and other training in Anchorage with the community health practitioners of the region. The methods that he uses are a combination of self-learned skills, those that he has learned from Maniilaq-sponsored courses, and techniques that he has learned from other Eskimo Doctors, particularly Della Keats.

Traditionally, a person was obliged to "fill the hands" of his healer with meat, fish or perhaps some money. The payment served to ensure the continued health of both the patient and the Eskimo Doctor. Today Maniilaq pays salaries to three Eskimo Doctors in the region. This has partially disrupted the traditional system of payment, although people still show their gratitude with gifts and food.

Like all men from Selawik, Andrew Skin Sr. was raised as a versatile outdoorsman. His motivation to practice as an Eskimo Doctor stems both from his enjoyment of the outdoors and the love he holds for other people. Recalling the days when he was among the finest hunters in the region, Mr. Skin remarked upon his happiness as a physically fit healthy hunter. He wants others to be happy, healthy and able to enjoy the outdoors like himself. His sincerity is reflected in his gentle and caring style. Mr. Skin shows great respect for his patients and they give him their gratitude in return. Known throughout the region for his kindness and his willingness to help anyone, Andrew Skin Sr. is a man who has been "helping a lot of people."

Overview of Andrew Skin's Practice

Table 1 lists the different problems treated by Mr. Skin between July 11 and July 24, 1981. The most commonly reported problems were abdominal pain and dizziness. Four patients were seen for lower abdominal pain, two for upper abdominal pain and two for dizziness. Five of the fourteen patients seen (36%) were women. Mr. Skin reports that usually females account for two-thirds of his patient visits. My presence as an observer may account for this discrepancy.

Table 2 lists the source of referral for the patients seen by Andrew Skin between July 11 and July 24, 1981. Six of the 14 patients seen (43%) were self-referred. Five of the 14 patients seen (36%) were referred by the Community Health Practitioner. The remaining 3 patients (21%) were referred by other family members (usually parents).

Table 3 shows the site of treatment for the same 14 patients. Four of 14 (29%) were treated at the Selawik clinic and three of 14 (21%) were treated at the Skin's home. Andrew Skin indicated to me that most of his patients come to the Skin home for treatment. It is possible that my presence as an observer made patients somewhat more hesitant to be treated at the Skin residence. This could explain the predominance of "house calls" during the study.

Manipulation of organs

A common type of treatment used by Andrew Skin Sr. involves the manipulation of various organs. As one might expect these techniques require familiarity with general internal human anatomy and strong but sensitive handwork. Knowledge, training and experience are all necessary in order to use these techniques.

Stomach problems of different sorts are a common

TABLE 1: Types of problems treated by Andrew Skin Sr from July 11-24,1981

Patient Problem	#males	#females	Total	%Total
Upper abdominal pain	2	0	2	14%
Lower abdominal pain	1	3	4	29%
Dizziness	2	0	2	14%
Frequent urination in small amounts	0	1	1	7%
Liver problem	1	0	1	7%
Heart problem	1	0	1	7%
High blood pressure	1	0	1	7%
Poisoning	0	1	1	7%
Alcohol withdrawal	1	0	1	7%
TOTAL	9	5	14	99%
%TOTAL	64%	36%		

TABLE 2: Source of referral to Andrew Skin Sr

	Referred by:				
Patient Problem	Self	Family	CHP*	Total	%Total
Upper abdominal pain	1	0	1	2	14%
Lower abdominal pain	3	0	1	4	29%
Dizziness	1	1	0	2	14%
Frequent urination (small amounts)	0	0	1	1	7%
Liver problem	0	0	1	1	7%
Heart Problem	0	1	0	1	7%
High blood pressure	1	0	0	1	7%
Poisoning	0	1	0	1	7%
Alcohol withdrawal	0	0	1	1	7%
TOTAL	6	3	5	14	99%
%TOTAL	43%	21%	36%		

*-CHP= Community Health Practitioner

TABLE 3: Location at which treatment was given

Patient Problem	Patient's Home	Skin Home	Selawik Clinic	Place of work	TOTAL	%TOTAL
Upper abdominal pain	0	1	1	0	2	14%
Lower abdominal pain	2	1	1	0	4	29%
Dizziness	1	0	0	1	2	14%
Frequent urination (small amounts)	0	0	1	0	1	7%
Liver problem	0	0	1	0	1	7%
Heart problem	1	0	0	0	1	7%
High blood pressure	1	0	0	0	1	7%
Poisoning	1	0	0	0	1	7%
Alcohol withdrawal	0	1	0	0	1	7%
TOTAL	6	3	4	1	14	99%
%TOTAL	43%	21%	29%	7%		

complaint of patients and are treated by manipulation. It is not unusual to see a person who feels 'full' after drinking only a cup of coffee. Commonly he or she will have a shallow breathing pattern. This is usually considered an indication that the stomach has shrunk and is interfering with the expansion of the lungs during inhalation. To correct this problem the stomach is stretched or manipulated. Mr. Skin instructs his patient to wait at least three hours after eating before seeking treatment so that the stomach is empty. The patient lies on his back with knees raised. Kneeling or sitting beside the patient, Mr. Skin "softens" the stomach by using his downturned fingers in a circular motion to apply gradually increasing pressure to the patient's abdomen. After a few minutes the stomach is softer to the touch. Then with a raking motion, Mr. Skin pulls the patient's stomach toward the patient's waist and somewhat towards the patient's right side. Patient's often report that they can feel their esophagus stretch in the neck area. After this technique (which usually requires between five and ten minutes to perform) patients are usually able to resume normal eating habits the same day.

A woman's uterus can also be manipulated to treat abdominal pains and frequent urination. The following is a description of a case in which Mr. Skin helped a pregnant women.

> A twenty-six year old woman in her second trimester of pregnancy was referred to Mr. Skin by the Community Health Practitioner. She had a sharp pain in her lower abdomen about a half hour after eating and was urinating frequently in small amounts. She found that the pain in her abdomen was more noticeable after eating seal oil; but as she put it, "I can't go without it." Andrew examined her abdomen with his hands and located the most sensitive part as being about two or three inches below her navel on the midline. The pain was diagnosed as resulting from the womb obstructing the bladder. The treatment started with a massage to soften the lower abdomen. Then the womb was lifted in the direction of the patient's head using a repeated kneading motion to draw the womb upwards with the downturned fingers of his hands. The patient experienced considerable relief from the pain and remained relaxed as Andrew probed the area that had been previously painful.

Mr. Skin commonly treats elders who have to urinate frequently in small amounts. These symptoms are considered to indicate that the bladder needs stretching. The patient lies on his/her back with knees raised. With the fingers of both hands, Mr. Skin lifts the bladder towards the patients head (superiorly) with a raking motion similar to that used in stretching the stomach.

Sour breath is attributed to "the stomach being stuck to the liver" among other things. To correct this the stomach is softened by manual massage in the area of its lower end (pylorus). The stomach is then moved to the patient's left, away from the liver, with a raking motion of the downturned fingers of both hands. Poor circulation is also considered a cause of bad breath. In this case, Mr. Skin massages the area around the inguinal lymph node to encourage circulation. In addition he instructs the patient to avoid rotten, "heavy-tasting", old or partially spoiled foods.

Treatment of "blood blocks"

Altered or disturbed blood flow is believed to be the cause of many problems that Mr. Skin treats. Abnormal blood may be characterized by the following qualities: dark, black, slow, watery. "Slowed-up" blood results from a "blood block" in some part of the body. Abdominal pains, lower back pain, swollen inguinal lymph nodes, high blood pressure and bad breath can be caused by a blood block.

If a patient has lower abdominal pain, Mr. Skin begins an abdominal examination by gently pressing the lower abdomen with the downturned fingers of one hand in an effort to locate the source of the pain. Occasionally this will cause a ticklish patient to giggle, to which Mr. Skin replies, "Well, you're not going to die tonight!"

Occasionally a blood block will form in the inguinal region. In order to determine which side is blocked the femoral pulse from both sides is compared. The weaker pulse corresponds to the blocked side.

Treatment of a blood block in the abdomen begins with procedures to assure that the blood flow in the inguinal region is adequate. This is done by using a gentle circular motion with the downturned fingers of one hand in the area of the inguinal lymph node. After this preparation the blockage in the abdomen can be softened with a similar motion directly on the site of the blockage.

Two examples of abdominal blood block treatments are described below:

> A 55-year old man had been experiencing abdominal pain in the lower left quadrant for the past few days. It hurt for him to have a bowel movement but there was no blood or mucous in his stool. By comparing the femoral pulse in each thigh a blood block was diagnosed as the problem. After "softening" the area near the inguinal lymph node, Mr. Skin manipulated the lower left quadrant of the abdomen as previously described so as to encourage blood flow. The patient experienced relief from his pain. A week and a half later the patient reported that he was still feeling fine.
>
> A 16-year old boy experienced sharp pain in his upper left abdomen that prevented him from being able to walk rapidly or run. The boy grimaced in response to light probing of the painful area. Mr. Skin manipulated the inguinal area using a circular motion of his downturned fingers and gradual increasing pressure. After this treatment, which lasted approximately ten minutes, the boy could be prodded in the previously sensitive area without any indication of pain.

Mr. Skin treated a man for a blood block in his neck:

> A 74-year old man had great difficulty speaking in his normal voice. Instead, he would speak very hoarsely and with a gravelly sounding voice that caused him great effort. The problem had started five years previously and had become gradually worse. After visiting three hospitals with no success, the man went to Mr. Skin to seek help for his problem. In probing the man's neck, Mr. Skin located an area anterior to the sternomastoid muscle which was firm and indicated a possible blood block. This area was softened and the man immediately reported a sensation of pressure that traveled down his right arm to his hand. An immediate improvement in his voice quality was apparent. The next two to three days, without further treatment, his voice became more and more under control until he could speak continuously for fifteen to twenty minutes without any problems.

High blood pressure is usually attributed to a blood blockage in the inguinal area and is diagnosed by deep palpation of the abdominal aorta just above the umbilicus. Manual diagnosis of high blood pressure is also mentioned by Juul-Fountain (1979) in her discussion of the methods used by Della Keats.

Although bloodletting (known as 'poking') is practiced by some of the Eskimo Doctors it is not a technique that Mr. Skin uses.

Dislocations

Treatments for various types of dislocations were described by Mr. Skin although none were actually witnessed. The theoretical basis for correcting a dislocation is simple, intuitive and may provide a logical starting point from which to understand the underlying theory of other Eskimo manipulative techniques. Both dislocations and internal disorders are thought of as changes in the shape or orientation of the affected part. Both types of problems are explained using rather mechanical ideas. Thus with dislocations as well as internal disorders, the goal of therapy is to restore the body part to its normal size, shape or location.

Medicinal remedies

Born and raised in Selawik, Mr. Skin has acquired a familiarity with local medicinal remedies for many problems. All of the remedies that are described use readily available materials or foodstuffs. For example, if someone suffers from food poisoning as a result of eating spoiled meat, a teaspoon of ground coffee wrapped in gauze is chewed as an antidote. If it is necessary to induce vomiting, one can guarantee the desired result by tickling the back of his/her throat with a feather.

Seal oil is a traditional part of the Eskimo diet. It is also used as a remedy for constipation, bad colds and pneumonia. Small quantities (a couple ounces) of the seal oil can be drunk to relieve constipation. Alternatively, the oil can be placed on the inside of a rabbit fur which is placed oil side down on the patient's abdomen overnight. The same preparation, when placed on the chest, is a remedy for chest colds or pneumonia.

For infected cuts, a dressing is prepared. A slab of whale blubber or caribou fat about one half inch thick is placed on the cut. This is covered with cellophane or plastic to keep surrounding areas free of the oil. Della Keats says that this dressing should be left on until the skin underneath becomes very wrinkly. In explaining the underlying theory of this treatment, Mr. Skin jokingly offers the germs point of view: "Oh Boy, we got something to eat up there!" Thus, the infection is induced to leave the wound.

Mr. Skin does not approve of non-medicinal drug use. He compares drugs to Cracker Jacks with the following familiar phrase, "The more you eat, the more you want." However, he does not scold those who abuse drugs or drink in excess. He will occasionally counsel people with drug problems or suicidal tendencies by telling them how much he likes them and how he doesn't want to see them hurt. Mr. Skin tells people that he wants them to be healthy and able to hunt and fish and enjoy life. People with problems respond well to Mr. Skin because they believe that he really cares.

Hygiene

Following treatment of any sort, especially procedures involving touch or manipulation, the healer always washes his/her hands immediately afterwards. The philosophy underlying hand washing is that the illness is removed permanently and will not affect the healer or the patient afterwards.

The concept of an illness or disease as a thing that can be physically removed from the body is related to another Eskimo healing tradition:

> "The Eskimos of St. Lawrence Island, Alaska sometimes brush sickness, with sweeping motions, from their patients onto a log of wood or a dog beside them. When the transfer of sickness is accomplished, the object is broken or the dog killed." (Murphy 1964)

The importance that is attributed to the act of washing one's hands after healing implies a similar conception of disease, i.e., something that can be removed from one's body. The practice is also understandable in a Western medical context that encourages the habit of washing one's hands after treatment in order to help prevent the spread of infection.

Discussion

Gaining a familiarity with traditional Eskimo techniques can be beneficial to Western-trained health care providers. Eskimo medical practitioners are an outstanding part of the Eskimo culture. This must be recognized and respected by visiting health care workers in order to develop trust and understanding in their patient relationships.

The efficiency of many of the treatments described herein is difficult to measure objectively for a number of reasons. First, many patients received different types of treatment simultaneously or in close succession. This makes it difficult or impossible to have a "controlled experiment" in which it is clear which component of treatment is responsible for a change in the patient's condition. The number of patients that were seen was relatively small, making it difficult to generalize about the effectiveness of a given treatment. Most importantly, many of the symptoms were aches and pains which could not be evaluated objectively. In these cases, a patient's testimony regarding relief from pain that he/she experienced is the only available measure of a treatment's success. Virtually all of Mr. Skin's patients that were observed and interviewed reported significant improvement after treatment. They were less satisfied with the treatment that they received from the hospital.

To successfully treat a person, a healer of any kind must work in the context of the patient's culture. A physician must be able to reconcile his methods of treatment with existing folk models of disease in order to treat all components of a patients illness. Knowledge of the methods used by Eskimo Doctors will help to familiarize the Western-trained physician with the expectations that their Eskimo patients have for treatment. It will also aid the Western physician in attempting to explain his own methods to an Eskimo patient. Western physicians can successfully use some of the techniques mentioned in this paper when given the proper instructions by a qualified Eskimo Doctor. Finally, a Western physician who is familiar with the types of problems commonly treated by Eskimo Doctors will be able to make successful referrals to Eskimo Doctors when appropriate.

Acknowledgements

This work was supported by combined grants from the University of Alaska and the University of Washington. Invaluable assistance was provided by Mr. Andrew Skin Sr. who described and demonstrated the techniques described in this paper. Augie Hoffman of Maniilaq Corp. and Dr. Wayne Myers were also helpful in carrying out this project. Georgia Birkett of Maniilaq Corp. and Oliver Cameron gave much-appreciated feedback on the first draft. I am also grateful to Dr. Mim Dixon for her encouragement throughout this project as well as for her extensive and thoughtful editing of this paper.

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[2] Population estimates from Alaska 1980 Population, Preliminary Overview, Alaska DOL January 1981.

[3] The spelling was changed from Mauneluk to the traditional spelling in the summer of 1981.

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HYPOTHERMIA AND COLD WATER NEAR DROWNING:

TREATMENT GUIDELINES

Tim Samuelson, M.D.

William Doolittle, M.D.

John Hayward, Ph.D.

William Mills, M.D.

Martin Nemiroff, M.D.

Introduction

Each year many people fall victim to environmental illnesses related to exposure to cold temperature. Among the most common problems are frostbite, hypothermia and cold water near-drowning. The treatment of frostbite is well defined. (1,2) The latter two conditions, although being life threatening, are less clearly defined and are more controversial with specific guidelines for therapy being difficult to elicit from the literature. Such guidelines are urgently needed by physicians, specialized rescue personnel, and even the general public.

In July 1981, the State of Alaska Emergency Medical Services arranged a meeting of individuals with diverse experience regarding cold injuries for the specific purpose of developing treatment guidelines for hypothermia and cold water near-drowning. The resultant guidelines are directed to each level of pre-hospital and in-hospital care available in Alaska from the general public/first responder through EMT's, paramedics, small clinics and tertiary care hospitals. All areas of care are discussed including indications for transfer to a higher medical facility. Such guidelines which attempt to overcome the confusion that derives from different levels of hypothermia (mild, severe), different place of treatment (field, hospital), different skills of those doing the treatment (EMT, physician), and different types of specialized rewarming equipment available, have simply not been available before. These guidelines have been widely distributed through the State of Alaska utilizing a slightly different format. They are presented here to disseminate the information as widely as possible.

HYPOTHERMIA

(Please note that these guidelines do not address **Frostbite**.)

I. General Considerations

A. The evaluation and treatment of hypothermia whether wet or dry, on land or water, is essentially the same. The following discussion does not specifically distinguish between chronic and acute, or wet and dry.

B. In the setting of the cold patient, a rectal temperature is one of the vital signs. In terms of the ABC's it would be:
   A - Airway
   B - Breathing
   C - Circulation
   D - Degrees

C. "Low Reading" thermometers are important in the care of the hypothermic patient. Regular thermometers are useless and probably dangerous in this setting.

D. Obtaining a temperature is important and useful for treating hypothermia. There is tremendous variability in individual physiologic responses at specific temperatures. In addition, there will frequently be times when a low reading thermometer is not available. Therefore, these guidelines are not based on the patient's measured temperature.

E. Axiom: With the hypothermic patient, THINK HEAT.
  1. No cold IV's.
  2. No cold ventilation therapy.
  3. No cold treatments of any kind.

F. We must **prevent further heat loss at the core.** This can only be done by insulating the entire patient plus adding heat to the "core areas" (head, neck, chest and groin).

G. **Add Heat** gradually and gently implies: (The term "add heat" is used rather than "rewarm" because often the victim is not actually any warmer with the addition of heat, but rather a further decrease in core temperature is minimized.)
  1. External warm objects applied to head, neck, chest and groin:
    a. Hot water bottles.
    b. "Warm Packs" (note: Chemical heat packs must be used with great care so as not to burn the victims skin - e.g. wrapped in a towel and watched carefully.)
    c. Warm rocks (wrapped in towels).
    d. Warm bodies, etc.
  2. Breathing warm moist air or oxygen.

H. Do not ever try to cool the extremities or use tourniquets or other occlusive dressings.

I. Be wary of statements or actions while working on patients who are unconscious or requiring CPR. These patients frequently remember what is done and said and it can produce severe psychological problems later on. This statement applies equally well to warm and cold patients.

J. It is absolutely necessary to preplan how you will handle these problems, know who will be in charge, and be familiar with the appropriate equipment.

K. A note on transport: Air travel in Alaska is obviously favored. If air travel is not possible other types of transport should be utilized such as snowmachine, dog team, cars, and especially boats in areas with water access.

L. The inside of the ambulance and any rooms where such patients are treated should be "room temperature" (approximately 65 to 72 degrees F. [18 to 22 degrees C.]).

M. Unheated oxygen (temperature about 72 degrees F. [22 degrees C.]) should not be utilized in hypothermia patients. Warm moist oxygen should be used instead.

II. Evaluation and Treatment

GENERAL PUBLIC/FIRST RESPONDER

A. EVALUATION
  1. **Severe Hypothermia**
    a. If the patient is cold and has any of the following signs or symptoms, he is considered to have **severe hypothermia**:
      1. Depressed vital signs.
      2. Altered level of consciousness including slurred speech, staggering gait, decreased mental skills.
      3. Temperature = 90 degrees F. (32 C.) or less.
      4. No shivering in spite of being very cold (alcohol intoxication makes this sign less reliable.)
      5. Associated significant illness or injury that is present or that may have permitted the hypothermia to develop.
  2. **Mild to Moderate Hypothermia**
    a. If the patient is cold and does not have any of the signs or symptoms noted above, he has **mild to moderate hypothermia**

B. BASIC TREATMENT FOR HYPOTHERMIA
  1. Treat very gently.
  2. Remove wet clothing. Replace with dry clothing or dry coverings of some kind.
  3. Insulate from the cold.
  4. Add heat to the head, neck, chest and groin externally (see G under General Practice), or internally if a system for breathing warm moist air is available.
    a. Note: In reality, when pre-hospital personnel add heat they rarely actually raise the core temperature. They succeed in preventing a further decrease in core temperature. If the core temperature in a very cold patient were raised significantly, electrolytes, acid-based, and dehydration problems could occur.
  5. No rubbing or manipulation of the extremities.
  6. No coffee or alcohol.
  7. Do not put patient in a shower or bath.
  8. Warm fluids can be given only after uncontrollable shivering stops and the victim has a clear level of consciousness, the ability to swallow, and evidence of rewarming already.
  9. If severe hypothermia is present, treat as above and transport to a higher medical facility.
  10. If there is no way to get to a higher medical facility, rewarm the patient slowly, cautiously and gradually with the methods indicated in G under General Points on Page 1.

C. Treatment of Severe Hypothermia with no life signs (CPR required).
  1. Basic treatment as indicated in section B above.
  2. Carefully assess the presence or absence of

pulse or respirations for one to two minutes.
3. If no pulse or respirations, start CPR. (Please note that the authors recognize there is some controversy regarding performing CPR on the very cold heart. Until more information becomes available to the contrary we recommend CPR be started on all pulseless apneic victims.)
4. Use mouth-to-mouth rather than bag/mask breathing.
5. Obtain a rectal temperature if possible.
6. If you are less than 15 minutes to a higher medical facility, do not bother trying to add heat.
7. If you are greater than 15 minutes to a higher medical facility, add heat gradually and gently (see section G).
8. Reassess the physical status periodically.
9. Transfer to a higher medical facility in all cases.

D. Treatment of severe hypothermia with signs of life (i.e. pulse and respirations present, CPR not required).
   1. Basic treatment as indicated in section B above.
   2. Add heat gradually and gently (see section G) if you are greater than 15 minutes from a higher medical facility.
   3. Transfer to a higher medical facility.

EMERGENCY MEDICAL TECHNICIAN I*

A. Treat as the GENERAL PUBLIC/FIRST RESPONDER with the following additional guidelines:
   1. Do not use oxygen unless you are performing CPR or you are specifically told to do so.
   2. Pneumatic antishock garments are not indicated for hypothermia but may be used to treat hypovolemic shock in a hypothermic patient.
   3. The indications for oral airways are the same in both the hypothermic and the warm patient.
   4. Communicate with a higher medical facility.

EMERGENCY MEDICAL TECHNICIAN II

A. Treat as an EMERGENCY MEDICAL TECHNICIAN I with the following additional guidelines:
   1. IV therapy
      a. Do not delay transport, communications, or other therapy by taking a long time to start an IV. IV's are difficult to start in cold patients.
      b. All patients with severe hypothermia should have an IV started after other stablilization.
      c. Use D5W at a rate of 75 cc. per hour.

B. Additional medications.
   1. Medications are inefficient and are metabolized much slower in the hypothermic patient.
   2. Narcan, 50% Dextrose, and Sodium Bicarbonate are not to be used unless specifically instructed to do so by a physician.

C. The Esophageal Airway Device: The indications and contraindications for the esophageal airway device are the same in both the hypothermic and the warm patient; use with caution because of the potential of cardiac irritation.

D. Communicate with a higher medical facility.

EMERGENCY MEDICAL TECHNICIAN III

A. Treat as an EMERGENCY MEDICAL TECHNICIAN II, with the following additional guidelines:
   1. In cardiac arrest:
      a. Attention to the ABC's.
      b. CPR.
      c. Attempt electrical D/C cardioversion once with 200 w/s if the patient is in ventricular fibrillation or ventricular tachycardia. (Note: Shivering can mimic ventricular fibrillation.) (Please note that the authors recognize there is some controversy regarding cardioversion attempts on the very cold heart. Until more information is available we recommend attempting cardioversion once initially regardless of temperature but if unsuccessful, no other attempts to cardiovert until the core temperature rises.)
      d. Add heat if greater than 15 minutes from the hospital.
      e. Repeat cardioversion may be attempted only if the core temperature is 85 degrees F. (30 degrees C) or higher.
      f. If cardioversion is successful give Lidocaine, approximately 1 mg. per kilogram IV bolus, followed in 15 minutes by a second bolus at 0.5 mg. per kilogram.
      g. If heart rhythm is asystole, do no attempt cardioversion and treat as an EMT II.
   2. **Morphine** is contraindicated in the hypothermic patient.
   3. **Cardiac monitoring** is indicated in all hypothermic patients as long as its use does not unnecessarily delay other or further care.

PARAMEDICS

A. Treat as an EMERGENCY MEDICAL TECHNICIAN III with the following additional guidelines:
   1. **Paramedics in isolated areas** in Alaska should function as an EMT III in regards to the hypothermic patient unless they are under the specific on-line direction of a physician or until a patient reaches a level of adequate psychological response (temper-

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* Note: Alaska Native Community Health Aides are for purposes of these protocols considered to fall into this category.

ature higher than approximately 90 degrees F).

2. **Endotracheal intubation:** The indications and contraindications for ET tube placement are the same in both the hypothermic and the warm patients; use with caution because of the potential of cardiac irritation.
3. Cardiac arrest: Treat as an EMT III.
4. Additional medications: Since medications are inefficient and also poorly metabolized in the hypothermic patient no additional medications are indicated.

SMALL/BUSH CLINICS

A. The extent of the evaluation and treatment in small/bush clinics is defined by the training of the personnel and available equipment as outlined in the foregoing guidelines. For transfer to a higher medical facility, the patient must be stabilized in the clinic rather than transferred as an unstable patient. If the patient is requiring CPR or is otherwise with unstable vital signs, then the necessary equipment and trained personnel - if not already at the clinic - should be sent to the clinic in order to stabilize the patient enough for transfer to a higher medical facility. Once the rewarming process has started in the clinic it should be continued with slow gradual techniques until transfer is possible and appropriate.

HOSPITALS

A. Some general points:
   1. Treat to the level of your ability as your hospital equipment, staff and skills dictate.
   2. All patients should be stabilized before any transport to another facility. The patient should be kept in the sending hospital until the patient is stable.

B. Evaluation
   1. Initial attention to the ABC's and CPR as needed.
   2. Vital signs, including rectal temperature.
   3. Brief history.
   4. Brief physical exam: Feel for skin coldness or warmth, level of consciousness, shivering, cardiopulmonary exam and associated trauma.
   5. Suggested laboratory and X-ray evaluation depending on available staffing and equipment:
      a. Chest x-ray.
      b. 12 lead electrocardiogram.
      c. Urine for urinalysis, sodium and osmolality.
      d. Blood for CBC, BUN, creatinine, electrolytes, sugar, platelets, PTT, Prothrombin Time, Liver Function Tests, amylase.
      e. Arterial blood gases.
      f. Weight.

C. Monitoring and Treatment
   1. Cardiopulmonary monitoring.
   2. An IV and/or central venous pressure line (in the superior vena cava, not the right heart) with D5W at 75 cc per hour. IV fluid and rate of infusion will vary depending on the patient's level of hydration and laboratory data.
   3. Urinary bladder catheter.
   4. Nasogastric tube if the patient is unconscious and the airway is protected.
   5. Endotracheal/Nasotracheal tube is indicated in the unconscious patient after careful neck evaluation.
   6. Daily weights; I&O.
   7. Always ventilate with warm moist air or oxygen (typical unwarmed ventilation is approximately 72 degrees F. [22 degrees C.]).
   8. Sodium bicarbonate administration is based on arterial blood gases.
   9. Continue monitoring until stable and warm.

D. **Add Heat**
   1. The recommended possibilities include:

      External Methods
      a. Gradual spontaneous rewarming.
      b. Warming blankets, warming mattresses, etc.
      c. Tub bath.

      Internal Methods
      a. Warm steam inhalation/ventilation.
      b. Peritoneal lavage.
      c. Warm IV fluids.
      d. Extracorporeal circulation (AV shunt).
   2. Regardless of the methods chosen for adding heat, the patient must be under total physiologic control to allow you to deal with his metabolic needs.
   3. Tub bath is the most rapid method and requires immediate laboratory results and extremely close physiologic monitoring of electrolyte and acid/base status to maintain control of the situation.
   4. Do not compromise extremity circulation by using tourniquets, MAST pants or ice packs.
   5. The recommended temperature is about 105 to 110 degrees F. (40 to 43 degrees C.) for all methods.
   6. For severe hypothermia without signs of life (requiring CPR):
      a. Warm the core as rapidly as you can handle, using one of more of the methods (for example, warming mattress, warms steam inhalation, **and** peritoneal lavage) trying to get the patient greater than approximately 85 degrees F. (30 degrees C).
      b. For severe hypothermia with life signs: Use your judgement, utilizing one or

more of the above methods.

E. **Most common problems**

Note: Drug therapy should be moderated because of the cold patient medications are both inefficient and poorly metabolized.

1. Arrhythmias - these are usually atrial arrhythmias.
   a. If very cold these atrial arrhythmias will usually convert spontaneously with rewarming.
   b. If the temperature is rising and the arrhythmia does not convert you may want to use the usual antiarrhythmic medications.
   c. If the treatment is not working add more heat.
   d. Ventricular fibrillation in the very cold patient is treated with CPR, adding heat, and after the temperature reaches approximately 85 degrees F. (30 degrees C.) defibrillation.
   e. In the patient whose temperature is rising, the standard (AHA, others) treatment for ventricular fibrillation should be utilized.
2. Dehydration - monitor and treat accordingly.
3. Hyperkalemia - monitor and treat accordingly (do not infuse potassium in IV's).
4. Hyperglycemia - monitor and treat accordingly.

F. **Transferring Patients to Tertiary Care Facilities**

1. The general indications to transfer the patient from a smaller hospital to a tertiary care facility are:
   a. Lack of nursing and support staff and equipment to properly provide for a critically ill patient.
2. Specifically, the patient should be transferred if:
   a. There is no capability for rapid arterial blood gas results.
   b. There is profound neurological depression.
   c. There is associated significant trauma.
3. The patient should not be transferred to a tertiary care facility until his vital signs are stable.

COLD WATER NEAR DROWNING

A. **General Considerations**

1. Anyone submerged long enough to be unconscious and/or require CPR and who has been under water less than one hour should be sent to the hospital.
2. If under water for more than one hour no attempt at resuscitation should occur.
3. If it is not known how long the person has been under water the victim is considered to be under water less than 1 hour and resuscitation should ensue.
4. There is no difference between fresh and salt water near drowning in regards to outcome or treatment.
5. These principles apply to **any** near drowning not just those in cold water. The difference between warm and cold water is that in long submersions (greater than 6 minutes), survival in warm water is much less than in cold water. The colder the water the better the chance for survival. Attempt to get a temperature of the water at some point in time primarily for prognostic purposes.
6. Because the level of coldness is rarely profound (below 85 degrees F. [30 degrees C.]) in cold water near drowning, the hypothermia aspect of the problem is less critical than the pulmonary or coagulation aspects. Rewarming is done very cautiously and gradually without the need for invasive techniques such as peritoneal lavage or AV shunts.
7. Many near drowning victims die of a particular type of Disseminated Intravascular Coagulation not from their pulmonary problems.

B. **Evaluation and Treatment**

For the general public/first responder, Emergency Medical Technician I, Emergency Medical Technician II, Emergency Medical Technician III, and the Paramedic, the treatment is the same as indicated for hypothermia, plus:

1. It is very important to clear the airway with any of the standard maneuvers but no specific maneuvers are mandatory to expel water from the lungs. Do not do the Heimlich maneuver on these patients.
2. CPR **must** be started immediately.
3. Assess carefully for associated injuries.

HOSPITAL CARE

1. The evaluation and treatment is generally the same as for hypothermia (with general supportive measures, CPR, etc.) except for the laboratory evaluation. In Near Drowning the suggested laboratory and X-ray evaluation is, depending on available staffing and equipment:
   a. Arterial blood gases.
   b. Chest x-ray
   c. 12 lead electrocardiogram.
   d. Electrolytes, BUN, CBC.
   e. Scan the serum for pinkness (indicating hemolysis).
   f. Institute cardiorespiratory monitoring.
   g. IV therapy - D5W at keep open levels. (In children, ¼ - ½ maintenance rate).
2. Additional therapeutic considerations:

- a. Attention to the ABC's, with respiratory support, intubation etc. as needed.
- b. Once circulation has been established do only passive rewarming (light sheets or light blankets, room temperature). Note that these patients often become hyperthermic.
- c. **Aspiration pneumonitis** and **pulmonary edema** may be treated with:
    1. Corticosteroids.
    2. Penicillin.
    3. Lasix.
- d. **Profound neurological depression**: Recommend cerebral resuscitation, as per CONN (3) with intraventricular pressure monitoring, diuretics and barbiturates.
- e. **Hemolysis** - Treat as with any patient with hemolysis.
- f. **Disseminated Intravascular Coagulation** - treat as with any patient with DIC.
- g. **Renal insufficiency** - Treat as with any patient with renal insufficiency.

3. Transferring the near drowning patient to a tertiary care facility.
    - a. The general indications to transfer the patient from a small hospital to a tertiary care facility are:
      (Note: The patient should be stabilized at the nearest hospital with intubation and ventilation as necessary.)
        1. Lack of nursing and support staff and equipment to properly provide on-going care for a critically ill patient.
    - b. Specifically, the patient should be transferred if:
        - a. There is no capability for rapid arterial blood results.
        - b. There is deterioration of pulmonary status.
        - c. There is renal insufficiency.
        - d. There is hemolysis.
        - e. There is profound neurological depression.
        - f. There is significant associated trauma.
    - c. Air transport should be in an aircraft pressurized to sea level or flying at sea level. You may need to increase oxygen supplementation depending on the level of pressurization.

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Reprints may be obtained from: EMS Section, Division of Public Health, DHSS, Pouch H-06C, Juneau, Alaska 99811.

ALCOHOLIC BLACKOUTS:

CLINICAL EXPERIENCE IN ANCHORAGE, ALASKA

Charles J. Hudson, M.D.

Workers in the field of alcoholism are commonly faced with patients who suffer from a variety of mental impairments resulting from the use of alcohol. In hospital emergency rooms patients are frequently seen who have suffered from a "blackout," an apparent memory loss extending for hours, days or even weeks. This blackout may or may not be recognized by the patient as a symptom of a serious problem; the patient may have suffered a physical injury, attempted suicide, been raped, or been accused of a criminal act, for which he or she disclaims any memory. It seemed worthwhile to review the alcohol literature to find out what is known about alcoholic amnesia. Case histories which the author encountered while with the Public Health Service in Alaska, are reviewed.

Jellinek (1), in writing on the various phases of alcoholism, felt that an alcoholic blackout signaled the first of three phases of alcohol addiction. He thought that alcoholics could carry on complex activities and hold conversations after moderate drinking which was accompanied by intoxication during an "alcoholic blackout."

Other authors have discussed the importance of the alcoholic blackout. Guze and Crane et al. (2) have indicated that blackouts occur in social drinkers. Ryback (3) has done work which has contributed more to our clinical understanding of blackouts. This investigator, in two separate experiments, allowed volunteer patients who were in hospital free access to alcohol. The subjects had been abstinent prior to drinking; the first group of four subjects were allowed to drink for a week, the second group of three men were allowed to drink for 12 days. The patients' behavior was observed; blood alcohol and other physiological measures were obtained. Ryback's results are quite enlightening; three out of the four subjects in the first group experienced blackouts. In behavorial events, Ryback notes: "In the first experiment, three of the four subjects had a blackout during the first 36 hours of drinking. Subject A had a lifted chair taken out of his hands just as he was about to hit another subject over the head for no apparent reason after 15 hours of drinking. Ten minutes later he did not remember the incident. The following day the subject did not remember the incident."

At another point Ryback notes: "A review of nurse's and researcher's notes for the periods of blackout revealed several things. The subjects were all drunk during those periods, but not so severely as to prevent ambulation or speech; however, they were often described as acting obnoxiously; that is, they made nuisances of themselves by repeatedly asking questions such as 'what time is it?' and being told, then returning five or ten minutes later to ask the same question again because they had forgotten. On one such occasion the author asked a subject to remember the words apple, pear and bicycle. When asked to repeat this one minute later, the subject successfully did so; but seven minutes later he could not remember the three words. He could recall his birthplace and date and other material involving remote memory." In Ryback's studies occurrence of a blackout did not necessarily correspond to a high blood alcohol level; one subject's alcohol blood level reached 0.305 percent without occurrence of a blackout. Ryback's conclusion was that blackouts tend to occur with rapidly rising blood alcohol levels, hence their onset during the first 36 hours. The individual who reached 0.305 percent reached this level on day three of the experiment. The small number of subjects limits the conclusions one can draw from Ryback's work; however, animal work done by Ryback suggests that no memory is being

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stored during the blackout period. The clinical observations of lack of recent memory during the blackout are strongly supportive of the idea that memory formation has stopped. In summary, Ryback's work strongly suggests the following major points about alcoholic amnesia, the alcoholic blackout:

1) It tends to occur during a period of rapidly rising blood alcohol level.
2) No memory formation occurs during blackouts which last for a block of time, i.e. from nine hours to three days.
3) Irrational destructive episodes may occur during blackouts.
4) Subjects can usually relate precisely when the blackout begins.

These behavioral observations should be brought a step further. Those of us who work with intoxicated people are aware that the inebriate behaves like some of Ryback's subjects, who, for example, repeatedly ask the same question every few minutes, because they cannot remember. Thus, the intoxicated patient who is seen in the emergency room who is disoriented or who cannot pass the three-word memory test or other simple tests of memory function, may be in the midst of a blackout. While the inebriate may provide some interesting psychodynamic information from a kind of narco-analysis which alcohol sometime permits, it is useless to do therapy with such a patient - they will not remember it. Most important, a person in the midst of a blackout is a public health risk, and can be considered a danger to himself and others; the sleep-off and detox centers which have sprung up in Alaska and other places in the U.S. are tailor-made for this kind of problem. We should make more of an effort to impress on everyone who deals with the intoxicated the importance of taking a few minutes, at the least, to test memory function. No one should be released from under the watchful eye of a community agency if he is suspected of still being in a blackout.

It is not known how much of a public health problem the blackout is, either in homes or in the public drinking establishments of Alaska. We can only assume that, from hospital experience, the blackout is a significant medical problem which needs more epidemiological study to define it as a public health problem. The following case reports have occurred in an Anchorage hospital and were seen by the author:

1) A 23 year old man was seen in the emergency room of an Anchorage hospital. He had been drinking in a bar on Fourth Avenue; he was not drunk and was oriented. He was badly cut about the face. He stated that he had been drinking with friends, and as he turned to leave the bar, "a fist shot out of nowhere and hit me in the face. I don't know who he (the assailant) was or why he hit me." These incidents of unprovoked assault are not at all uncommon in Anchorage, and some seem similar to subject A in Ryback's study, who raised a chair to strike a fellow patient for no reason. Friends accompanying the young man verified his account of the assault. While no firm conclusion can be drawn about the assailant, the situation sounds suspiciously like the episode in Ryback's study - the unprovoked, attempted assault by chair.

When the author lived in Anchorage, the Police Department periodically published a list of bars and night clubs in Anchorage and the number of associated assaults and fights during a given time period. It would be enlightening at some point to study such episodes to determine what role the alcoholic blackout might play.

2) A 31 year old hospital employee was referred for psychiatric evaluation and therapy by an Anchorage court. Following an evening of drinking, he was driving home and was given a traffic summons for going through a traffic light and driving while impaired. In the course of the psychiatric evaluation he indicated total loss of memory from a time prior to driving until the following morning. Thus he left a bar, drove, was stopped, given a summons, and somehow still managed to get home - all while in a blackout.

3) A 30 year old woman was brought to the emergency room of an Anchorage hospital because she had taken an overdose of aspirin. She was seen by an internist, found to be inebriated, was gastric-lavaged and admitted to the internal medicine service. When seen the next morning, she was disoriented, somnolent, and could give no recent history. Twenty-four hours later she was wide awake, oriented, with no evidence of depressive disorder. She stated that her boyfriend had left town for several days, and on the day of her overdose she had been consuming whiskey all day with friends. She recalled having an argument with friends, and at that point ceased to have any memory for subsequent events. She did not recall taking the overdose, which was confirmed by friends, nor did she recall coming to the emergency room, being treated, admitted to the hospital, or her first psychiatric interview. The patient seemed indignant when first confronted with the evidence. In the context of all the information available, there was no motivation for the overdose and she had no major psychiatric disorder. Her loss of memory for the events seemed complete on mental status examination.

This particular case also strongly suggests that many events which occur under the influence of alcohol are not due to "psychological mechanisms." This case is not the first time that suicidal behavior has been reported during a blackout (4).

Ryback's observations have other implications for drinking patterns in Alaska. The importance of a rapid rise in blood alcohol as being an etiological factor has relevance in Alaska. One pattern commonly seen is "crash drinking," the object being to drink rapidly to get drunk as quickly as possible. The author has been to drinking parties in rural Alaska where each invited guest was given a fifth of whiskey and urged to "drink up" (as fast as possible). Many patients seen in various mental health clinics admit that they drink fast to get drunk or blot things out. Another phenomenon is "bell

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Good mornings start with restful nights.

Dalmane *(flurazepam HCl/Roche)* patients fall asleep faster, sleep longer and seldom awaken with morning hangover.

Feeling well rested in the morning usually means having slept well the night before. And for insomniac patients receiving hypnotic therapy, a good morning also means awakening with few side effects from their medication. Many physicians choose Dalmane for their patients who suffer from insomnia for this very reason.

Aside from enabling patients to fall asleep more quickly and sleep longer, Dalmane seldom causes morning hangover. Most Dalmane patients feel alert and refreshed when they awaken. In 53 paired-night clinical studies comparing Dalmane and placebo in 2010 insomniac patients with a variety of secondary diagnoses, most Dalmane patients awakened more alert and refreshed, and less groggy and drowsy, than on nights when they had taken only placebo.[1] In a double-blind crossover study of 42 patients in private practice, approximately three times as many patients reported feeling refreshed and alert upon awakening after a night on Dalmane (flurazepam/Roche) compared to placebo nights.[2] This difference was highly significant ($p<0.001$). And a retrospective study of 2542 hospitalized patients who received Dalmane revealed only a 3.1% incidence of side effects.[3]

While residual effects from Dalmane therapy are infrequent, patients should be cautioned about drinking alcohol, driving or operating hazardous machinery after ingesting the drug.

Efficacy and safety in a broad range of patient types.

Over 2000 clinical trials involving more than 10,000 patients have shown that Dalmane patients fall asleep sooner, sleep longer and experience fewer nocturnal awakenings.[4] The safety and efficacy of Dalmane have been demonstrated in medical and surgical hospitalized patients, in patients seen in office practice and in elderly patients.[5-8] Since the risk of oversedation, dizziness, confu-

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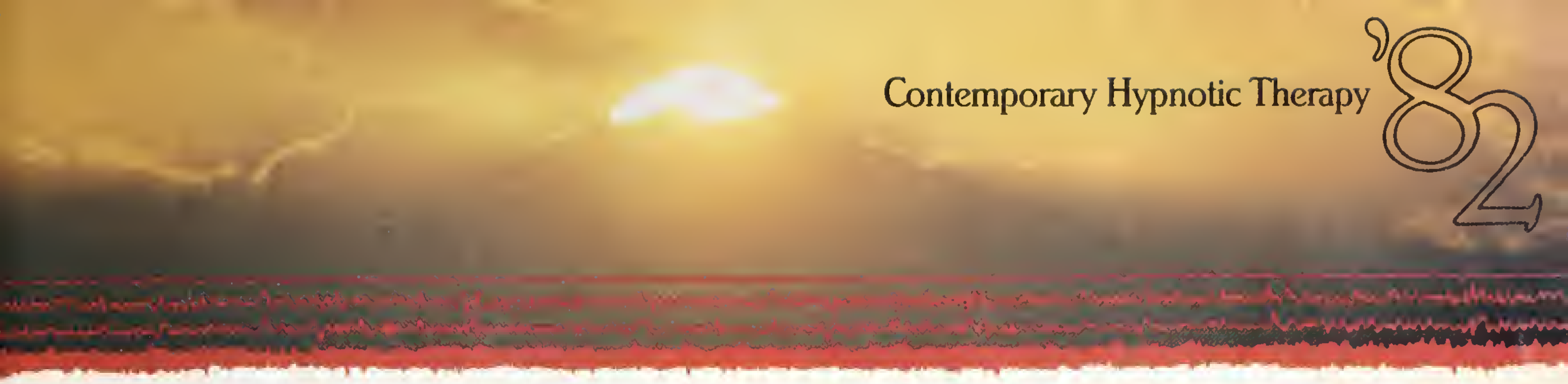

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sion and/or ataxia increases with larger doses in the elderly, it is recommended that the dosage be limited to 15 mg.

Moreover, the efficacy and safety of Dalmane for the treatment of insomnia have been demonstrated in thousands of patients with a variety of primary medical conditions, including cardiovascular, neuropsychiatric, endocrine-metabolic, gastrointestinal, genitourinary, respiratory and musculoskeletal disorders.[1] Dalmane (flurazepam HCl/Roche) is contraindicated in pregnancy and in patients hypersensitive to the drug.

Avoids rebound insomnia upon discontinuation.

Rebound insomnia—a worsening of sleep beyond pretherapy levels after drug discontinuation—has been reported as a potential clinical problem with some hypnotics.[9,10] However, this problem has not been reported with Dalmane. In eight out of eight sleep laboratory studies, there were no reports of rebound insomnia.[11] When you prescribe Dalmane, you can be confident of efficacy that enhances therapeutic progress. Your insomniac patients can be assured of a restful night, night after night—a good start for a good morning.

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Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; in acute or chronic medical situations requiring restful sleep. Objective sleep laboratory data have shown effectiveness for at least 28 consecutive nights of administration. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended. Repeated therapy should only be undertaken with appropriate patient evaluation.

Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patient to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

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ringing." Persons attending liquor establishments in some parts of the State will sometimes, within an hour's time, find themselves with four or five drinks in front of them as a succession of nameless benefactors have decided to "buy a round for the house" at which time a bell is usually sounded in the establishment.

There are many aspects of blackouts which are as yet unexplained. Goodwin (2) has reported a greater susceptibility of females to alcoholic blackouts. This "effect" is apparently not on the basis of more alcohol consumed per unit size or weight. Hudson (5) recently reported three cases of women who experienced blackouts during the first month of treatment with tricyclic antidepressant medication, most likely a synergism between alcohol and drug.

In summary, a period of alcoholic amnesia, or blackout, is a significant psychosocial event which renders the affected individual vulnerable to harming self or others. Some factors in its genesis have been discussed. It is probably a common phenomenon which needs more epidemiological study.

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MESSAGE FROM THE PRESIDENT

Greetings,

I would like to announce that the 1983 Alaska State Medical Convention will be held in Cordova, May 28 - 31st.

With the aid of the convention planning committee, Jo Ann and I are looking forward with anticipation and enthusiasm to hosting this year's convention on our home front.

We hope to entice everyone to attend with the promise of delicious fresh sea food, rustic out-door and in-door recreational activities, fitting for a remote but lively fishing village and an interesting professional program.

With careful planning, we will endeavor to make this year's convention a successful one and look forward to seeing you in May!

Sincerely,

Art Tilgner

Art Tilgner, President

Tail Coverage: Shrouded In Mystery

Coverages of $100,000 or less were thought to be adequate by many physicians only five or ten years ago. What will be adequate in the next decade at today's limits of $1 million plus? Nationally, physician verdicts have skyrocketed by 255% during the last five years alone. Trends also indicate that larger "medical malpractice" awards seem to result from suits brought long after an alleged event.

Times Change

Inflation shrinks dollar values. Consumer attitudes change. New legal doctrines are being forged. Just a few years ago who gave much thought to a claim for granting staff privileges, or a claim for an unwanted birth. And what about supplementary costs. In Alaska, prejudgment interest is added by the court to the verdict handed down by the jury. Lets face facts, juries evaluate damages on today's and not yesterday's dollar values. Yet, Alaska law provides for an annual rate of 10½% interest computed from the date of injury. Think what happens to your dollar obligations when a suit is brought five years after you treated a patient with the trial held three to four years later. Also unique to Alaska is a court procedure authorizing plaintiffs to collect their court costs. That's generally another 10% on top of the verdict.

So what do we do when we purchase professional liability to protect ourselves from "medical malpractice" claims. Many physicians given a choice would still choose traditional occurrence coverages. Its only human nature to hang on to traditional concepts. The fixed price tag and a piece of paper with no strings attached.

Pitfalls of Occurrence Insurance

But popular impressions are at odds with reality when selecting professional liability insurance. Because the traditional occurrence coverage ties everything -coverage language and dollar protection to the alleged injury date, it may fall short in providing you with adequate protection for the late filed suit. Its a problem commonly known as the "long tail of medical malpractice."

Discovery policies in the form of claims-made coverages have remedied many shortcomings of occurrence policies as the coverage and premium rates are geared to the discovery date on which the claim surfaces and that is an essential difference in keeping up with your needs and avoiding speculative pricing. Frankly, it makes good business sense to gauge the market place on what is happening today and not for the unknowns and uncertainties we may face tomorrow.

On the horizon, we see discovery type coverages in many fields other than for the professions of medicine, law and architecture. Discovery policies will grant protection for any claim regardless when the incident occurred. You will be able to change from one insurance company to another and not worry about the late claim because the company holding your policy at the time a claim is made will honor it.

Today's claims-made policies are very similar except that the event must have occurred following the date when your first claims-made policy went into effect. Otherwise, with each renewal policy your coverages are updated and you can select the appropriate dollar protection you need. This avoids planning ahead for the next decade.

Claims made coverages have taken on a new direction since they were first introduced. Resistence grew from the lack of guaranteed future protection. In some cases protection was limited to a number of years. With some you were not necessarily assured continued protection when you terminated your policy. In return, many physicians responded negatively to claims-made because of uncertain conditional insurance pegged as ["tail coverage"]. Today, ["tail coverages"] are fairly uniform. Guaranteed protection with no strings attached. These coverages grant you continued protection from the moment you terminate your claims-made coverages. In many respects the ["tail coverage"] is an occurrence policy.

Tail Coverages Shrouded in Mystery

["Tail coverages"] are very important to you. And not just for your continued protection. They play a very critical role in determining your overall insurance costs. Yet ["tail coverages"] are shrouded in mystery. And with good reason. Terms, costs and guarantees still differ from one insurance company to another. As the rates for these coverages are generally not published up front, the true cost of claims-made is often misunderstood.

With the exception of certain entitlements where premiums are waived for disability, death or retirement, ["tail coverage"] costs are basically nothing more than an updated revision of premium needed for each year you had a policy less the accumulation of yearly premiums paid.

This complicates rate comparisons when shopping for professional liability insurance. Some companies may "skew" their rates so as to have an attractive front end cost. Some may level off artifically low compared to what an occurrence policy would be charged. But in the end ["tail coverage"] costs tend to balance the scale for claims-made premiums. Generally speaking, the better the claims experience of the insurance company, the lower the cost of ["tail coverages"].

MICA began offering two types of claims-made several years ago. The conventional "pure" claims-made and the "modified" claims-made. So far, the "modified" form, which is priced to a near scale of occurrence coverages, has prepaid nearly all costs for ["tail coverages"].

What many do not know, and certainly not unique to MICA are ["Nose coverages"]. Instead of buying ["tail coverages"] from your insurance company, you can generally opt to purchase the appropriate MICA renewal rate as if you had MICA insurance all along. MICA would then be responsible for those claims which might be made against you for the time you had another claims-made policy.

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SURPRISE REGULATIONS AFFECTING PHYSICIANS IN NEW TAX LAW SIGNED BY PRESIDENT REAGAN

Buried deep in the new tax law titled the **Tax Equity and Fiscal Responsibility Act of 1982** signed into law September 3, 1982, is language allowing the Department of Health and Human Services to greatly alter practices with regard to Medicare reimbursement of some physicians. Regulations have been published in the Federal Register which are not fully interpreted or understood at this time, and only a 30 day comment period is provided for the affected parties and organizations. The regulations are clearly aimed at hospital based physicians, at least the more traditionally hospital based such as the Pathologist, and include establishing a prospective reasonable compensation equivalent (RCE) limits adjusted by specialty and location on the amount of physician compensation Health Care Financing Administration would consider reasonable in determining Medicare payments for physician services to hospitals and individual patients. These limits would apply to compensation received from or through the hospital. RCE annual limits proposed for the various specialty areas are published in the proposed regulations and vary somewhat depending on population density and other factors.

Another feature of the proposed regulations includes establishing specific conditions for services performed by physicians to be considered services to individual patients, as opposed to services to a hospital, and would be made on a charge basis.

Long-standing contractual arrangements physicians have with hospital providers could be disrupted on short notice. the proposal for the use of a salary equivalent concept (annual salary limit) is a radical departure from the past and the pros and cons of the new proposed regulations demand more than the 30 day comment period provided. The proposed regulations, in effect, redefine the practice of medicine and clearly opens the way for major changes to be put forth affecting all physicians including those not traditionally hospital based.

Anyone having an interest in these proposals should send written comment to Secretary Schweiker of HHS, with copies to Mr. Edwin Meese, Counselor to the President, and to Congressmen and Senators from your state. Letters should request extension of the comment time for meaningful response to these new and far-reaching proposed regulations. Many of the complex proposals are not fully understood at this time, and not all persons and organizations are aware of possible major changes which could occur as early as the end of this year.

Franc Fallico, M.D.

REGIONALIZATION OF PERINATAL CARE IN ANCHORAGE

The concept of regionalization of perinatal care has been widely accepted throughout the United States since the publication of the monograph **Toward Improving the Outcome of Pregnancy: Recommendations for The Regional Development of Maternal and Perinatal Health Services.** This document, representing an effort among perinatal health care providers in the United States brought together under the auspices of the American Medical Association, American Academy of Pediatrics, American College of Obstetricians and Gynecologists, has been responsible for the recent decline in perinatal mortality and morbidity in the United States.

Regionalized systems for perinatal health care delivery have defined three levels of hospital services. Level I hospitals, providing services for uncomplicated deliveries and newborn care, are felt to be appropriate in rural settings where geographic variables mandate care in the rural setting. Early identification of high-risk pregnancies and ill newborns with referrals to higher levels of care where specialized services are available are a vital part of Level I services. Level II hospitals are felt to be appropriate in urban settings, where in addition to Level I services, care for more complicated pregnancies and neonatal illness is provided. The Committee on Perinatal Health (1) felt that Level II hospitals should serve a population base of approximately 2,000 live births per year. Level III hospitals provide a complete spectrum of care from uncomplicated pregnancy, delivery, and newborn care for the high-risk mother and critically ill neonate. Level III units are felt to appropriately serve a region of 8,000 to 12,000 deliveries per year.

The justification for regionalization of perinatal care is based on the optimal deployment of scarce resources, especially money and personnel. Quality of care, affected by under- or over-utilization is also an important factor. Thus, the Committee on Perinatal Health (1) has suggested that "a reasonable approach . . . is to encourage consolidation of multiple small maternity and newborn services into a larger service where such action is not impeded by geographic or other insurmountable problems."

During the summer of 1981 the joint perinatal planning committee, composed of obstetric and pediatric representatives from the four hospitals in the Municipality of Anchorage met to discuss perinatal health care issues. These hospitals were: Alaska Hospital (presently Humana Hospital), Providence Hospital, Alaska Native Medical Center and Elmendorf AFB Hospital. Among the conclusions reached by the committee was that although Anchorage hospitals did not at present meet numerous nationally-accepted standards of perinatal health care delivery Anchorage and Alaska should strive to meet such standards. (2) The committee recognized that the designated Level III perinatal center for the state, Providence Hospital, did not meet some important Level III standards. It also recognized that none of the other three hospitals met standards of Level II care that were appropriate for an urban setting. (2)

A major deficiency in the committee's work was its failure to define Level II and Level III requirements for Anchorage. A significant barrier to defining levels of care for Anchorage is that to do so, using national guidelines, requires a major reorganization of perinatal health care services.

The most recent statistics for the Municipality of Anchorage indicate the following number of births for calendar year 1980: Providence Hospital, 1818; Alaska Hospital, 1189; Alaska Native Medical Center, 689; and Elmendorf AFB Hospital, 664. According to currently applied standards for perinatal care, Anchorage has a relatively large number of hospitals, each doing a relatively small number of deliveries.

This situation, for reasons outlined below, poses problems that interfere with each one of these hospitals achieving their highest potential of perinatal health care delivery services.

1. Level II and III hospitals require access to specialty physician services. For example, both Level II and III hospitals should have a 24 hour in-house obstetric anesthesia service (1). At the present time **none** of the hospitals in Anchorage are capable of providing this service. A major reason for this is the small number of deliveries in each of the four hospitals that fail to justify the speciality service. Similar situations exist for other services of perinatology and neonatology.
2. Modern perinatal management dictates access for high-risk patients to sophisticated and highly technological assessment of the mother and fetus. For example, invasive and non-invasive fetal monitoring, scalp pH sampling, etc, are an important part of the management of a high-risk pregnant patient. Each of the four hospitals in Anchorage provide varying degrees of sophistication of such services. Again, the small number of deliveries fail to provide adequate justification for the large amount of time and money expended to fully develop such sophisticated services.
3. These issues directly relate to the expense of running a Level II or Level III perinatal center. It has been estimated that the annual cost of a Level II perinatal center is approximately 1.2 million dollars per year and the cost of a Level III center is approximately 2.6 milion dollars per year. These estimates made in the mid 1970's probably represent an underestimation of present-day costs. The cost of operating small obstetric services as exists in all four hospitals in the Municipality of Anchorage are probably high because of the expense of maintaining constant space and personnel during periods of lack of use of these respective facilities.
4. over the last decade there has been no significant improvement in fetal mortality rates in Alaska (3). This compares with the steady decline in fetal mortality rate throughout the United States. It is likely that the availability of facilities that provide intensive intrapartum management of high-risk pregnant women will be able to make an impact on the lack of improvement in fetal mortality rates.
5. Experience elsewhere suggests appropriate regionalization perinatal health care can make a significant impact on perinatal mortality and morbidity. This has led to attempts in numerous states, especially in urban areas, to regionalize maternity services. For example, Quebec integrated maternity services so that no hospital was delivering less than 3,000 to 5,000 infants. Legislation in California has discouraged maternity services for any less than 1500 deliveries per year. The monograph, **Toward Improving the Outcome of Pregnancy** has suggested that Level II units are difficult to maintain for less than 2,000 deliveries per year.
6. There is an increasing body of medical literature that suggests that perinatal mortality is reduced in perinatal facilities that have the potential of delivering sophisticated and intensive perinatal care. Williams (4) found lower than expected perinatal mortality in California hospitals with large services for newborns, high rates of Cesarean section, and a high ratio of specialists to generalists. A similar experience has been quoted by J.P. Lucey in Vermont. (5) The experience in Quebec (6) suggested that the lowest perinatal mortality is obtained by hospitals with intramural neonatal intensive care units. The most recent evidence (7) for working towards increased sophistication of hospital perinatal services in the urban setting for potential high-risk pregnancies was suggested by the finding in New York that neonatal mortality rates were lower in Level III hospitals compared to both Level I and II hospitals.

The issues raised and discussed above suggest the Municipality of Anchorage should further investigate the consolidation and regionalization of perinatal health care services in Anchorage. Furthermore, although the jurisdiction of the Health Planning Commission of the Municipality may not extend to federal health care facilities such as Elmendorf AFB Hospital and Alaska Native Medical Center, both these hospitals should be included in attempts at regionalization and consolidation of services. Using present-day standards of perinatal care it is extremely difficult to justify the existence of more than one of two obstetric centers in Anchorage. Consolidation of services should result in decreased cost and better utilization, and allow for improved perinatal health care services. This should result in significant improvement in perinatal mortality statistics for both Anchorage and the state of Alaska.

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Jack Jacobs, M.D.

AUXILIARY NEWS

ANCHORAGE:

Garage sale nets $2200 for child Safety Seat Program

The Auxiliary Garage Sale held the weekend of September 10th and 11th raised $2200. The proceeds from the successful sale will be used to begin a child safety seat loaner program. The committee members responsible for this project were Chairman Lesley Morresey, Fran Marbarger, Maureen Merchant, Marge Muzzall, Lynn Ragle, Aaltje Smith, Mary Jo Beal, and Lorrie Horning. Items left from the Garage Sale were donated to The Salvation Army, except those which were saved to begin next year's sale.

On October 9th, a potluck dinner was held at the home of Dave and Sherri McGuire as a fund raiser for AMA-ERF. The "Octoberfest" costume party was highlighted by a trip to Hawaii door prize. The lucky winner was Gwen Gieringer and $450 was raised for the scholarship fund.

A new Auxilian to Anchorage, Carolyn Crouch was the guest speaker at the October 14 morning coffee held at the home of Marie Edwards. The purpose of the morning's meeting was to begin plans for the child safety seat loaner program. Carolyn showed a film about child safety borrowed from the Sheriff's Department and spoke about her recent experience in setting up a similar program in North Carolina.

Auxiliary members are in for a treat on November 11th, when they will be guests at the home of Marianne Wieland, Auxilian and Alaska Artist. Marianne will demonstrate her unique printing technique and display her work, much of which carries an Arctic theme, a legacy of the years she flew to the villages of Nome and Kotzebue as a stewardess with Alaska Airlines. Following Marianne's demonstration there will be a catered lunch. Out of town guests are always welcome at any of our events.

Lorrie Horning, President
Anchorage Auxiliary

PHYSICIAN SELF ASSESSMENT

Choose the most appropriate answer.

1. Appropriate treatment for a young male athlete with a stress fracture of the tarsal navicular would be:

   A. Rest and avoidance of running in athletics.
   B. Cast, immobilization in a walking cast.
   C. Cast, immobilization, non weight bearing.
   D. Open reduction internal fixation.

2. Severe orthopedic problems associated with trisomy 21 (Down's Syndrome) include all of the following except:

   A. Atlantoaxial dislocation.
   B. Osteonecrosis of the capital femoral epiphysis.
   C. Congenital dislocation of the hip.
   D. Scoliosis.

3. In the followup of a skeletal immature 9 year old girl with a 19 degree thoracic scoliosis, x-rays should be obtained at what interval.

   A. Every month
   B. Every 3 months
   C. Every 6 months
   D. Annually

4. A 15 year old boy is referred by his family doctor with an 8 month history of chronic and acute pain associated with scoliosis. He has a 42 degree left curve from T-8 to L-3. Your approach at this point would be:

   A. Posterior spine fusion from 2 segments above to one segment below the curve with Harrington rod instrumentation.
   B. Fit with a Milwaulkee brace and evaluate the amount of correction obtained from the brace.
   C. Fit with a Boston brace or under arm brace and evaluate the correction obtained from the brace.
   D. Evaluate with bone scan, myelogram and blood studies.

5. A relative contraindication to the use of pulsating electromagnetic fields in the treatment of tibial diaphyseal nonunion would be:

   A. A fracture gap of more than 5 mm.
   B. A fracture more than 2 years old.
   C. Previous attempts of surgical bone grafting.
   D. Presence of infection.

6. Spontaneous displacement of the atlantoaxial joint (C-1, C-2) is a recognized complication of rheumatoid arthritis. The appropriate treatment for this subluxation consists of:

   A. No treatment since this is not a serious problem and will resolve with time and medication alone.
   B. Bracing in a SOMI brace or other similar cervical support, since this condition is only temporary and will resolve with time and medication.
   C. Posterior cervical fusion of the occiput to C-2 to prevent increasing symptoms and possibly fatal complications.

7. Spontaneous osteonecrosis of the knee is a relatively recently described entity. The spontaneous onset of knee pain, at rest and with activity in a relatively older person should prompt one to think of osteonecrosis of the knee. Appropriate management consists of the following:

   A. Aspirin and supportive therapy alone because nothing can be done for this condition.
   B. Serial roentgenograms and possibly bone scanning for diagnosis and supportive treatment with aspirin.
   C. Serial roentgenograms, possible bone scanning and referral for surgical treatment.

8. When a patient presents with an amputated finger or hand and there is a chance that it could be reimplanted, it is essential to quickly get the patient and the amputated part to a replantation facility. Primary care of the patient prior to transport should include all of the following except:

   A. Control of arterial bleeding with hemostats.
   B. Control of arterial bleeding with direct pressure dressings and elevation of the part.
   C. Wrap the amputated part in a saline dampened gauze sponge, place it in a plastic bag in an ice water bath.
   D. Start an IV and IV antibiotics.
   E. Assessment and appropriate inital management of associated injuries.

9. Six hours after a minor cat bite of the hand a man presents with severe pain, rapidly spreading erythema and swelling. Gram stain of the scant watery transudate form the bite shows only a few gram negative rods. The most likely diagnosis and treatment of choice is:

   A. Mixed Staph/Strep cellulitis - oxacillin
   B. Pasteurella Multocida cellulitis - penicillin
   C. Pasteurella Tularensis - streptomycin

D. Klebsiella - cephalosporins
E. Pseudomonas - carbenicillin

10. Which of the following is not true in DeQuervain's disease.
    A. It is most common between age 30 and 50.
    B. The most common causes are occupatinoal and associated with rheumatoid disease.
    C. Finklestein's test is usually positive.
    D. Men are most likely to be affected.
    E. It involves the abductor pollicis longus and extensor pollicis brevis tendons.

True or False

11. Asepsis in the operating room is a recognized requirement to control postoperative infection. Decontamination or sterilization by chemical means (soaking) is long outdated and has no place in current operative environment.

12. With respect to bony union following fracture, injuries in the middle third of radius and ulna heal at approximately the same rate in patients between the ages of 25 and 40.

13. In traumatic injuries of the knee meniscus, no healing of meniscus tissue can be documented and therefore meniscus tears uniformly require surgical removal.

14. Exercise, brace treatment, or internal surgical stabilization and arthrodesis are no longer the only alternatives for the treatment of adolescent scoliosis.

EKG OF THE MONTH

This electrocardiogram was obtained during an emergency room visit of a 45 year old man. The patient had his stenotic aortic valve replaced with a Starr-Edwards ball-valve aortic prosthesis in the 1960's. He was symptom free and took only anticoagulants and procainamide for PVC's until one half hour before the first EKG was taken. His problem started with a near syncope sensation, fluttering in the chest and weakness. His work companions noted sweating and pallor. After a quick ride to the emergency room he was found to have no measurable blood pressure and a heart rate of 210.

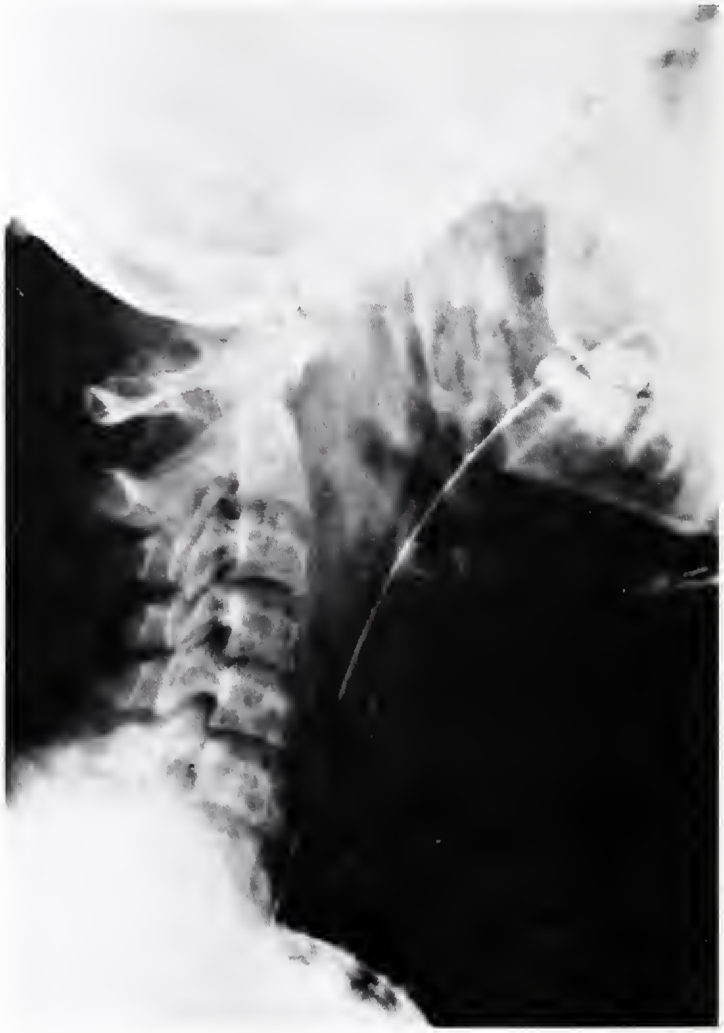
Questions

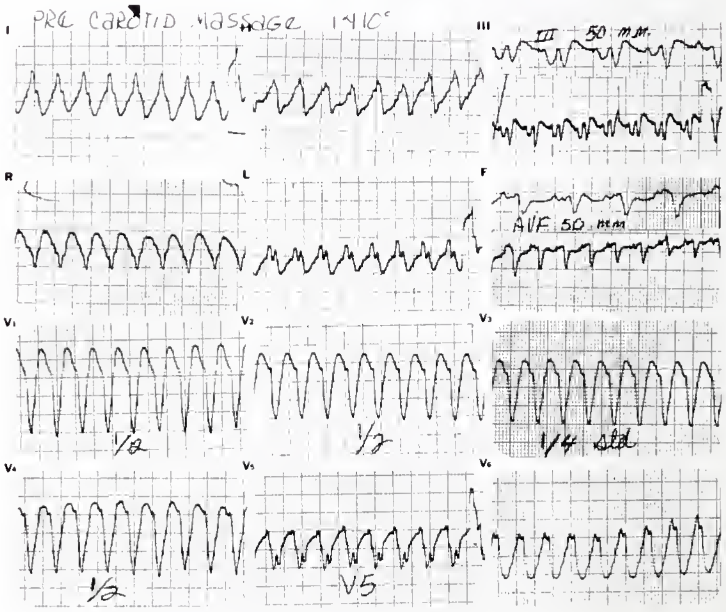
1. On the basis of the history and electrocardiogram, what do you think is the problem?
2. What are your first treatments?

X-RAY OF THE MONTH

The accompanying radiograph belongs to a 12 year old girl who was brought to the Emergency Room after being struck by an automobile. She was intubated and CPR initiated at the scene of the accident. This lateral cross-table cervical spine film was the first film obtained.

Describe the abnormalities seen. What is the appropriate treatment for the abnormalities identified? What additional films should be obtained, if any?





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STETHESCOOPS from the STETHESNOOPS

Several of our friends, including one cardiologist and an orthopedic specialist, went duck hunting. All came back, bagging no birds - just some "not so good" jokes.

The medical community is polarized over the current hospital bed controversy. Without agreement, who knows to which third party the deed might go.

Is Brian McMann's middle name really hepatitis B?

Please note - Congratulations are in order to Milo Fritz in his latest legislative campaign. We expect to hear more news about and from him.

Nice things that could happen:
- A duet between Jim Lanier and Ken Peterson.
- A potting exhibit by Paul Eneboe.
- An oboe solo by Fred Hillman.
- A base viola made by Ted Shohl.
- And a comedy show by Clinton Lillibridge, William Miner and Thomas Potter.

Let us regale you with this short story. A small child belonging to one of our noted GI specialists, manually removed some rather firm contents from the john to prevent an obstruction. Horrified, the mother returned said material to the proper spot. The precocious offspring was proved correct when the john was flushed. It overflowed and overflowed . . .

A nepharious new Neuro organization was invented by the Neurologists - they decided to legitamize their Thursday lunches by calling themselves "The Alaska Neurological Society". (Probably for IRS reasons too!)

Obviously everyone has been behaving, if not, there are some great coverups.

Non-Anchoragites - your news not included - your spies are not applying themselves. HELP!

Please send info on any scandal or plain common gossip to Dr. Wm. H. Bowers, 4120 Laurel Street, Anchorage, AK, 99504. No signatures required!

POST GRADUATE COURSES

The schedule listed here gives provisional dates and titles which will probably undergo further changes. However, it is unlikely that events will be added.

January 21, 22	**Recent Advances in Neuroscience**
February 11, 12	**Symposium on Headache**
March 19, 20	**Thermal Injury and the Immunoregulatory Response**
March 24-26	**Perinatal Symposium**
April 15, 16	**Sports Medicine**
May 27, 28	**Otitis Media in the Child**
June 20-22	**Critical Care Medicine Symposium**
August 11, 12	**Summer Update Conference/ Obstetrics & Gynecology**
September 23-25	**Thermal Conference**
October 7, 8	**Cardiology for Non-Cardiologists**
November 25, 26	**Diseases of the Eye and Skin**
December 9, 10	**Computers and Micro-processors for the Physician's Office**

For information contact:

Judy Kyle
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3200 Providence Drive
Anchorage, Alaska 99502
(907) 276-4511 ext. 1005

1983 ANNUAL MEETING
ALASKA STATE MEDICAL ASSOCIATION
Tentative Schedule

FRIDAY, May 27, 1983

8:00 - 5:00	Registration	Reluctant Lobby
9:00 - 12:00	Council Meeting	Reluctant Dining Room
2:30 - 5:00	Scientific Session Film: "History of Cordova"	Theater
6:00	Cocktail Hour	Elks Club
7:00	Seafood Extravaganza	Elks Club

SATURDAY, May 28, 1983

7:30	Continental Breakfast	Reluctant Dining Room
8:00 - 9:30	Business Meeting	Dining Room
9:45 - 11:30	Scientific Session	Theater
12:00 - 1:30	Lunch; ALPAC Annual Meeting	The Club
1:30 - 3:00	Scientific Session	Theater
3:15 - 5:00	Business Meeting	Theater
5:30 - Depart	OPEN - local events Million Dollar Bridge/Boatyard, hike, cruise, clam dig, stunt flying demo	
	Steak night open to general public	Elks

SUNDAY, May 29, 1983

7:30	Continental Breakfast	Reluctant Dining Room
8:00 - 9:30	Business Session	Dining Room
9:45 - 11:30	Scientific Session	Theater
12:00 - 1:30	Lunch - OPEN	
1:30 - 3:00	Scientific Session	Theater
3:15 - 5:00	Business Meeting	Theater
6:30 - 7:30	Cocktail Hour	Respective Places for Dinner
7:30	College of Surgeons	Reluctant Dining Room
	AAFP	Elks
	et al Chowder Feed	Cannery Dining Room

MONDAY, May 30, 1983

7:30	Continental Breakfast	Reluctant Dining Room
8:00 - 9:30	Business Session	Reluctant Dining Room
9:45 - 11:30	Scientific Session	Theater
12:00 - 1:30	Lunch - OPEN	
1:30 - 3:00	Scientific Session	Theater
3:15 - 5:00	Business Meeting	Theater
6:00	First Bus to Black Sheep	Depart from Reluctant
6:30	Second Bus to Black Sheep	Depart from Reluctant
6:15 - 7:30	Cocktail Hour	Black Sheep
7:30	President's Banquet	Black Sheep
8:30	Presentation & Exhibit Contest Drawing	Black Sheep
9:30	First Bus to Reluctant	
10:00	Second Bus to Reluctant	

TUESDAY, May 31, 1983

9:00 - 11:00	Council Meeting
10:00 - 11:00	Cannery Tour Possible Morning Cruise

PLANE DEPARTURE

EDITORIAL COMMENT

As the years pass by and physicians gracefully mature teaching and sharing their wisdom for betterment of mankind, Big Brother stands poised in the dark corridors of Washington with the dagger of regulations ready to thrust a fatal blow to Asclepius. Continued interference of government regulatory organizations first in hospitals then at private practitioners shall destroy the highest quality of medical care in the world. In this issue of The Journal is a short article by Dr. Franc Fallico explaining recent regulatory restrictions on hospital based physicians. Below is a letter in toto to Mr. Schweiker which the editorial staff thought pertinent for your perusal.

Wm. H. Bowers, M.D.

October 18, 1982

Richard S. Schweiker, Secretary
200 Independence Avenue, S.W.
Washington, D.C. 20201

Dear Mr. Secretary:

Although I am just a simple country doctor with no interests in either pathology or radiology, I must protest your punitive medicare regulations and the speed with which they are being applied. To take the last point first, a 30 days "take it or leave it" proposal from the government seems more appropriate to a state of national emergency than to a routine negotiation with small businesses around the nation. **I would urge you to allow at least a 90 day response period for legitimate discourse on this less than simple matter.**

As for your sudden and one-sided lid placed upon the compensation to be allowed pathologists and radiologists, allow me to make several comments.

I. **How much is enough?** Clearly there are persons readily available who would testify that you, or a "Rock Star," or I, or the average welfare client are either overpaid or underpaid. Let us therefore ignore both the greedy and the envious and concentrate on the effects of a sudden, externally imposed, significant limit on compensation for professional services rendered. I see the following effects as almost inevitable:

(a) a loss of incentive, enterprise and personal freedom
(b) a loss of interest
(c) a loss of time devoted to maintaining or improving x-ray or laboratory services being provided (or to budget restraint or administrative services and employee relations) resulting in need for more personnel in administration as well as lower employee productivity in x-ray and laboratory.
(d) a loss of that important good feeling that one's efforts and successes are appreciated, which is the basis of good morale and productivity.

In other words, these one-sided regulations represent a big step toward conversion of our dynamic, first rate, up-to-date pathology, laboratory and x-ray services to those of a type all of us have normally experienced only when working in government institutions (second rate, non-responsive, 9:00 am to 4:30 pm, "take it or leave it," "like it or lump it" service) where the art of medicine is less important than the art of looking busy or moving up in the bureaucratic structure.

II. **Who needs radiologists and pathologists anyway?** We all do. Those who are ill, those who will become ill and those who have chosen to care for the ill. Without radiology and pathology there can be **no diagnosis or treatment** of those who are ill or fear that they may be ill; at least none that is acceptable by the standards of modern American Medicine. Who has set the standards of this medical care, who has kept us at the forefront of technological progress, who has provided the large and educated market needed for important progress in medical devices such as the CAT SCANNER; who measures the result of our therapy and tells us how we are doing, who is an open-door, full-time, day and night consultant to all physicians, **devoted by their specialty selection** to ongoing medical education and innovation in all medical fields??? **The pathologists and radiologists.** They help us, teach us, keep us honest by measuring our results, and provide the laboratory and radiology quality control without which any hospital would revert to nursing home standards of care, and they provide the very large market for medical advances and technology that have kept American medicine unsurpassed and American medical technology one of our proudest, most rapidly growing and respected export industries. In this way radiologists and pathologists **support a great deal of employ-**

ment both directly in hospitals and support facilities (as newer and better techniques are developed) and also **in the medical manufacturing industries.** In other words, they are important to our gross national product and for our exports.

III. **So you need to save money for the taxpayer?** If you reduce the income of any well-to-do-professional by one-half you reduce your tax receipts from that individual by one-half as well (except where the excess income is invested in government stimulated programs such as low income housing which provide a "tax shelter" by government design). **You get a lot more taxes from one weathly productive person than from all the many unemployed.** If you reduce incentives, stifle initiative, and assault the basic American freedom to benefit from ones own extra efforts, radiologists and pathologists will surely lose some of their interest; thus you reduce hospital efficiency (for it is a well-known medical fact that poorly performed x-ray studies or lab tests are not only a direct waste but also often lead to additional unnecessary and costly studies or procedures, further increasing overall hospital costs) while you also reduce federal income from taxes as well. It seems a senseless assault on these crucial individual physicians, as well as an extreme discourtesy, to revise their income drastically by fiat (or even, where there is no loss of income, to tell them how and how much they shall be paid; reducing them, in effect, to the status of a nationalized industry or a government that we all expected President Reagan to correct. The least you can do is explain and discuss and negotiate; I thought that was the American Way!

IV. **Would we all be better off if every American was suddenly dropped to one-half of his previous income?** There would be less for everyone. President Reagan was elected to overcome this inflationary sort of scheme. When the pie gets bigger there is more work for all. More workers means more taxes. Service industries are clearly the future employers of America. We already produce enough food, cars and tractors. Our big growth industries will be computers and service industries and medical technology, with the latter two providing an enormous additional market for computers. Instead of cutting the heart out of every top notch American Medical Center (by offending and alienating our pathologists and rdiologists) you should hope that "medical care" (including service industries designed to meet the special needs of the young and the aged) will take up an ever increasing portion of the federal budget, with workers in those fields paying an ever higher percentage of the Federal tax burden. We have a nursing shortage nationwide - yet many fully trained nurses are idle or working at higher paid jobs as cooks or clerks. Double the income of nurses, demand quality for the dollar, and the country will thrive. Cut the income of the doctor and ignore the fact that American Medicine is the best anywhere, and you damage the keystone of the service industries that this nation will need in the coming years if we are to deal with massive unemployment and crucial quality of life issues.

I urge you to reconsider your priorities, take time to treat these men fairly. Our government works only as long as it works for us and not we for it.

Sincerely yours,
Arndt Von Hippel, M.D.

cc: Senator Stevens
Senator Murkowski
Representative Young
Edwin Meese, Counselor to the President

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William H. Bowers, M.D.
ALASKA STATE MEDICAL ASSOCIATION
4107 Laurel Street #1
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__ Arrange manuscript as follows: (1) Title page including title, author(s), and location by city and state, institution at which work was done, address to which reprint requests should be sent. Authors will be sent three complimentary copies of the Journal in which their work appears. (2) Abstract of less than 150 words using no abbreviations, footnotes and references. (3) Text including introduction, methods, results and discussion. (4) Acknowledgements. (5) References, tables, figure legends and figures.

__ References are cited in the text by numerals enclosed in parentheses. The reference section is typed double-spaced on sheets separate from the text and is numbered consecutively in the order in which references are cited in the text. Included are last names and initials of all authors, title of article, name of publication, volume, inclusive pages and year published. Abbreviations will conform to those used in **Index Medicus**.

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ANSWERS to PHYSICIAN SELF ASSESSMENT

1. *C.* The fracture characteristically occurs in young male athletes and characteristically is a saggital plane fracture centrally located in the bone. The diagnosis can be extremely difficult and often a bone scan as well as tomograms are required to localize the lesion. In a recent multi-institutional study reported in the Journal of Bone and Joint Surgery Volume 64-A, June 1982, a series of 21 of these fractures were described. In 10 patients treated with cast immobilization on crutches, non weightbearing, there was a 100% union rate.

2. *B.* The orthopedic problems associated with this syndrome have been reviewed by Bennet, Rang and Roy of the Hospital for Sick Children and reported in the Journal of Bone and Joint Surgery, Volume 64-B, page 289, 1982. Most all the orthopedic problems can be related to ligamentous laxity. Other conditions in addition to these which are associated with trisomy 21 include, dislocation of the patella, genuvalgum and pes planus. Osteonecrosis of the capital femoral epiphysis or Perthe's Disease is associated either with a growth disorder or a vascular disorder in the capital femoral epiphysis and does not have an increased associated incidence in trisomy 21.

3. *C.* Idiopathic scoliosis progresses in the skeletal immature patient at a rate of approximately 1 degree per month. The producibility of x-rays and x-ray measurements is probably accurate only to + or - 3 degrees. X-rays more frequent that every 6 months do not yield meaningful results and x-rays as infrequent as annually may result in significant progression which might be prevented by bracing at the appropriate time.

4. *D.* This patient presents with several features which should raise one's suspicion for tumor or infection. Pain is very rarely present in idiopathic scoliosis but is usually present in spinal tumor or infection. The relatively short curve is also atypical for idiopathic scoliosis. Of course 80% of severe idiopathic scoliosis occurs in females, so the fact that this curve occurred in a male is also not typical. Many authors have called attention to the fact that tumors such as osteoblastoma and ostoid osteoma can cause painful scoliosis in this age group. Recent description of osteoblastoma in the thoracic and lumbar spine was published by Akbarnia and Rooholamini, Journal of Bone and Joint Surgery, 63-A, page 1147, September, 1981.

5. *A.* Stimulation of osteogensis by pulsating electromagnetic fields, elecromagnetic coils, or by direct electrical stimulation by implantable electrodes has become a fairly standard treatment for nonunion in the last 10 years. Sherards in England reported 86.7% union rate in tibial fractures and 71.7% in all nonunions (JBJS 64-B, page 189). Bassett, Mitchel and Gaston reported 87% union rate in tibial fractures from New York Orthopedic Hospital (JBJS 63-A, page 511). In neither of these nor any other series was the success rate adversely influenced by the presence of infection, previous operations or a long duration of a nonunion. The presence or absence of metal implants at the fracture site does not seem to influence the results; however, osteoblasts remain relatively poor "broad-jumpers" even when electrically stimulated.

6. *C.* In a recent review article by Sadeghpour et al in Orthopedics, Volume IV, #12, December, 1981, the indications for treatment of C-1, C-2 displacements are reviewed. Spontaneous displacement of the atlantoaxial joint occurs in some 19 to 34% of patients with rheumatoid arthritis. Left untreated, this condition tends to be progressive and reports of death from herniation of the odontoid process as well as thrombosis of the vertebral arteries have occurred. Fusion of C-1, C-2 alone will allow progression at the occipital C-1 level, and may produce continuing symptoms. Known rheumatoid patients with complaints of neck pain, headache or weakness in the extremities should be evaluated by a frontal and lateral x-ray of the cervical spine to assess the possibility of subluxation of C-1, C-2.

7. *C.* A recent article in the Journal of Bone and Joint Surgery, January, 1982, Volume 64-A, page 47, by Tomihisa Koshino, reviews spontaneous osteonecrosis of the knee and its treatment. Knee pain at rest and with activity is the principle presenting complaint. Patients are in general age 50 or older although isolated occurrences as early as age 40 have been described. Initial radiographs may fail to show any abnormality in spite of vigorous complaints of pain. Serial roentgenograms over two to five months may well demonstrate a lucency in either the medial or the lateral femoral condyle followed by the subsequent development of a sclerotic halo. In its earliest manifestation the

problem affects bone alone. Subsequently with demineralization, cyst formation and consequent loss of articular support, the cartilaginous surface becomes involved. Initially this may only show cracking or fissuring but flaps of articular cartilage become loosened and subchondral bone exposed. This in turn leads to development of osteoarthritis. Early recognition and appropriate diagnosis followed by proximal tibial osteotomy will in most instances relieve the pain and avoid the long term complications of severe degenerative arthritis of the knee.

8. *A.* Hemostats should not be used to control arterial bleeding in a possible replantation situation because they will crush and shorten the arteries which need to be repaired. Reference -- Campbells Operative Orthopedics, Edmonson and Cronshaw 6th Ed. 1980, 268-269.

9. *B.* Pasteurella multocida is a common cause of rapidly spreading excruciatingly painful cellulitis following even minor cat bites. The organism is usually very sensitive to penicillin and responds rapidly to treatment. Incision and drainage is usually not necessary when treatment is started within 12-24 hours of the bite. A mixed Staph /Strep infection would be the next most likely but they generally take 2-4 days to develop a full blown cellulitis and of course would be gram positive cocci on stain. Reference -- Harrison's Principles of Internal Medicine, 5th Ed., 1579.

10. *D.* Women are ten times more likley to get DeQuervain's disease than men. Reference -- Campbells Operative Orthopedics, 6th Ed., 1980, 364.

11. *False*

    Arthroscopy and arthroscopic surgery have had great impact on the treatment of pathology of the knee and other joints. With increasing use of the arthroscope it has become physically impossible to sterilize by gas sterilization techniques because of the time requirements involved. Gas sterilization of a given instrument usually requires a period of twelve hours. With multiple arthroscopic procedures done in a single day, gas sterilization between cases becomes impossible. Steam autoclaving advances the deterioration of optical equipment used in arthroscopy. Since arthroscopic equipment is quite expensive, steam autoclaving in the long run is not desirable. In a recent article in the Journal of Bone and Joint Surgery, February, 1982, volt. 64-A, page 237, Johnson et al reviewed the use of 2% gluteraldehyde (Cydex) as a sterilization measure. They reported 12,505 arthroscopic procedures over an 8 year period with an infection rate of 0.04%. Comparable although somewhat higher rates have been reported by others using this procedure. Contrary to popular opinion in the appropriate setting "soaking" of arthroscopic instruments is appropriate and allows widespread use of arthroscopic procedures.

12. *False*

    The middle third of the ulna retains a significantly slower rate of union and risk of nonunion in fracture of young adulthood. The best explanations for this phenomenon relates to blood supply and proportion of cortical to cancellous bone involved.

13. *False*

    The outer 1/3 of the meniscus at the meniscus-capsular junction has been demonstrated to exhibit significant blood supply which contributes to complete healing of meniscus tears which do not become unstable. When mechanical instability of meniscus tear is present union of meniscus tissue usually will not occur.

14. *True*

    Myeloelectric stimulation of paravertebral musculature now has been shown to be clinically applicable for certain types of adolescent scoliosis bypassing traditional brace vs. surgical considerations for treatment.

ANSWER to X-RAY OF THE MONTH

The obvious changes noted on the radiograph are the endotracheal tube which appears in appropriate position, and the subcutaneous emphysema. This is probably secondary to chest trauma suffered during the accident.

The vertebral bodies of the cervical spine are normally aligned and there are no fractures or dislocations of the vertebral bodies relative to themselves. Careful inspection should have revealed that the prevertebral soft tissues in the upper neck are much too prominent.

This patient has suffered an atlanto-occipital dislocation: The occiput has been dislocated forward on C-1. Atlanto-occipital dislocations are rare and almost uniformly fatal. Only six cases of survivors have been reported in the literature and nearly all of these had significant neurological sequelae. The injury comprises only 1% or less of all cervical spine injuries but is an important injury to identify because if the patient, as in this case, is undergoing CPR and the injury is recognized, resuscitative efforts can be terminated because there is virtually no hope of survival. If the patient is still alive when this is identified, then great care needs to be exercised in the handling of the patient, otherwise death may result.

The exact mechanism of injury is not known, but death is apparently due to transection of the medulla oblongata. The injury is usually caused by traffic accidents or falls, and the head is almost always dislocated anteriorly on C-1.

In most cases of injuries such as this, no further films are necessary for diagnosis. The diagnosis is made on the lateral film and once made, appropriate immobilization should be instituted immediately if the patient is alive. If not, then resuscitation may be terminated.

REFERENCES

1. Genweiler JAjr: The radiology of vertebral trauma. W.B. Saunders Co., Philadelphia, Pa 1980.
2. Kattan KR: Trauma and no-trauma of the certival spine. Charles C. Thomas, Springfield, Ill. 1975.

ANSWERS to EKG OF THE MONTH

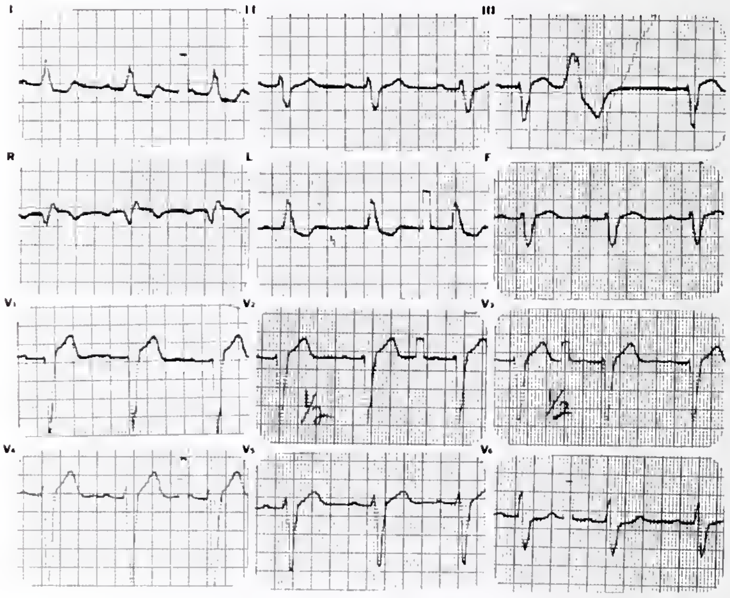
1. Neither the history nor the electrocardiogram clearly will lead to a certain electrocardiographic diagnosis in this particular situation. The two most likely rhythm disturbances which could look like this are supraventricular tachycardia with aberrant ventricular conduction and ventricular tachycardia. Of the supraventricular tachycardias paroxysmal atrial tachycardia is the most likely because the ventricular rate is consistent with PAT and not a whole number fraction of 300 which is usually the case with atrial flutter. Also a heart rate of 210 is rarely seen in sinus tachycardia.

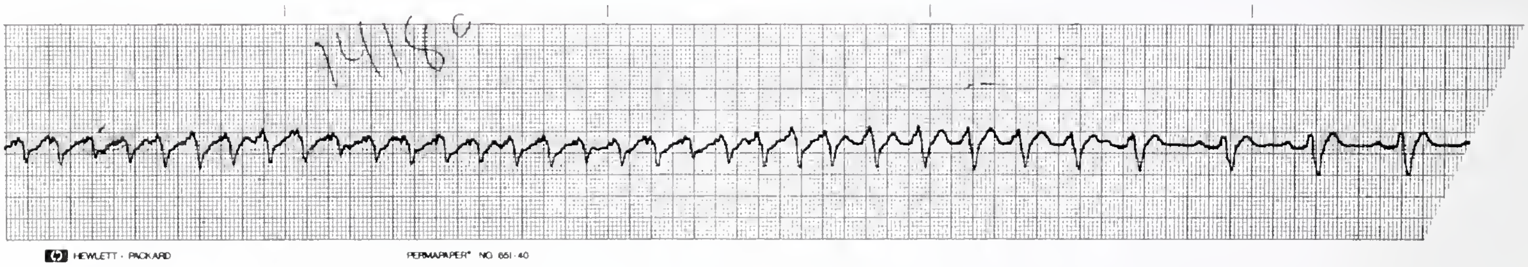
2. When you are faced with a patient in hemodynamic embarrassment from his rhythm disturbance, it is a good practice to treat for the most malignant of the possibilities first.

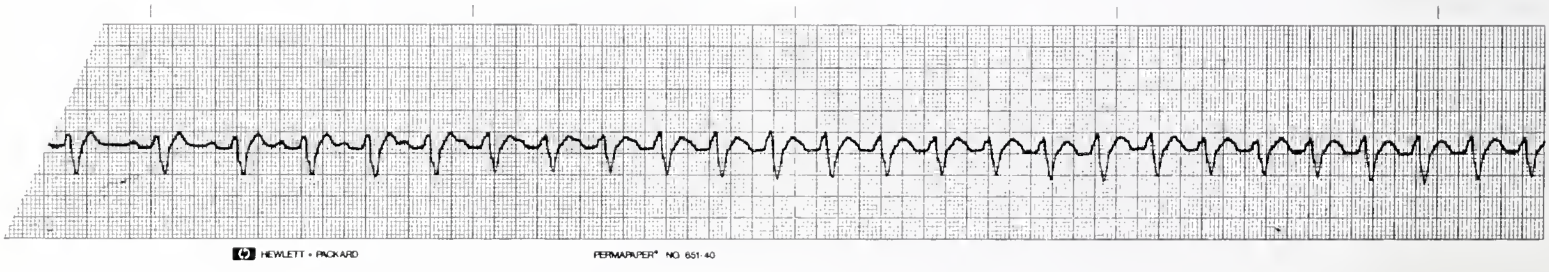
The patient regained blood pressure of 90 systolic when he was laid flat. After obtaining a blood pressure without resorting to drugs, he was treated with IV lidocaine fearing that he had ventricular tachycardia. There was no change in rhythm. Since he remained alert and no congestion was developing, carotid massage was started which gratifyingly produced sinus rhythm (see rhythm strip).

Upon resumption of sinus rhythm his blood pressure returned to normal and he felt well. A second 12 lead electrocardiogram was taken. On this EKG (figure B) we see that even in sinus rhythm the patient has aberrant ventricular conduction (in this instance a left bundle branch block type pattern).

So we see how easy it is to be fooled by rhythm strip patterns and how occasionally the clinical course and subsequent results provide the final diagnosis of atrial tachycardia with aberrant ventricular conduction.







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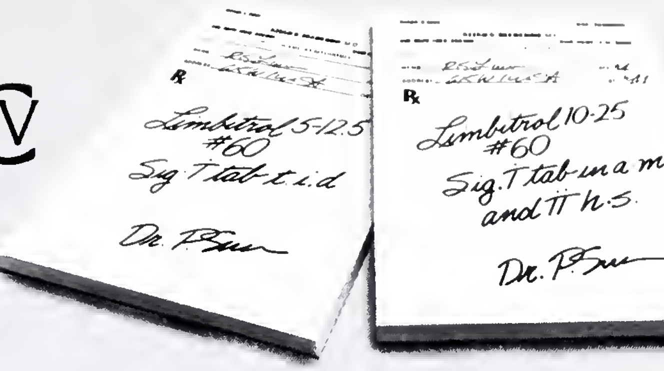

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References: 1. Claghorn J: *Psychosomatics 11*:438-441, Sept-Oct 1970. **2.** Rickels K: Drug treatment of anxiety, in *Psychopharmacology in the Practice of Medicine,* edited by Jarvik ME New York, Appleton-Century-Crafts, 1977, p 316. **3.** Baldessarini RJ, Tarsy D: Tardive dyskinesia, in *Psychopharmacology: A Generation of Progress,* edited by Lipton MA, DiMascio A, Killam KF. New York, Raven Press, 1978, p 999.

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> ***Usage in Pregnancy:* Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage; withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline; symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).
Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.
Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.
The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs:
Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.
Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.
Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.
Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.
Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.
Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.
Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.
Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.
Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.
Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. I.V. administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.
Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single *h.s.* dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.
How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 50.

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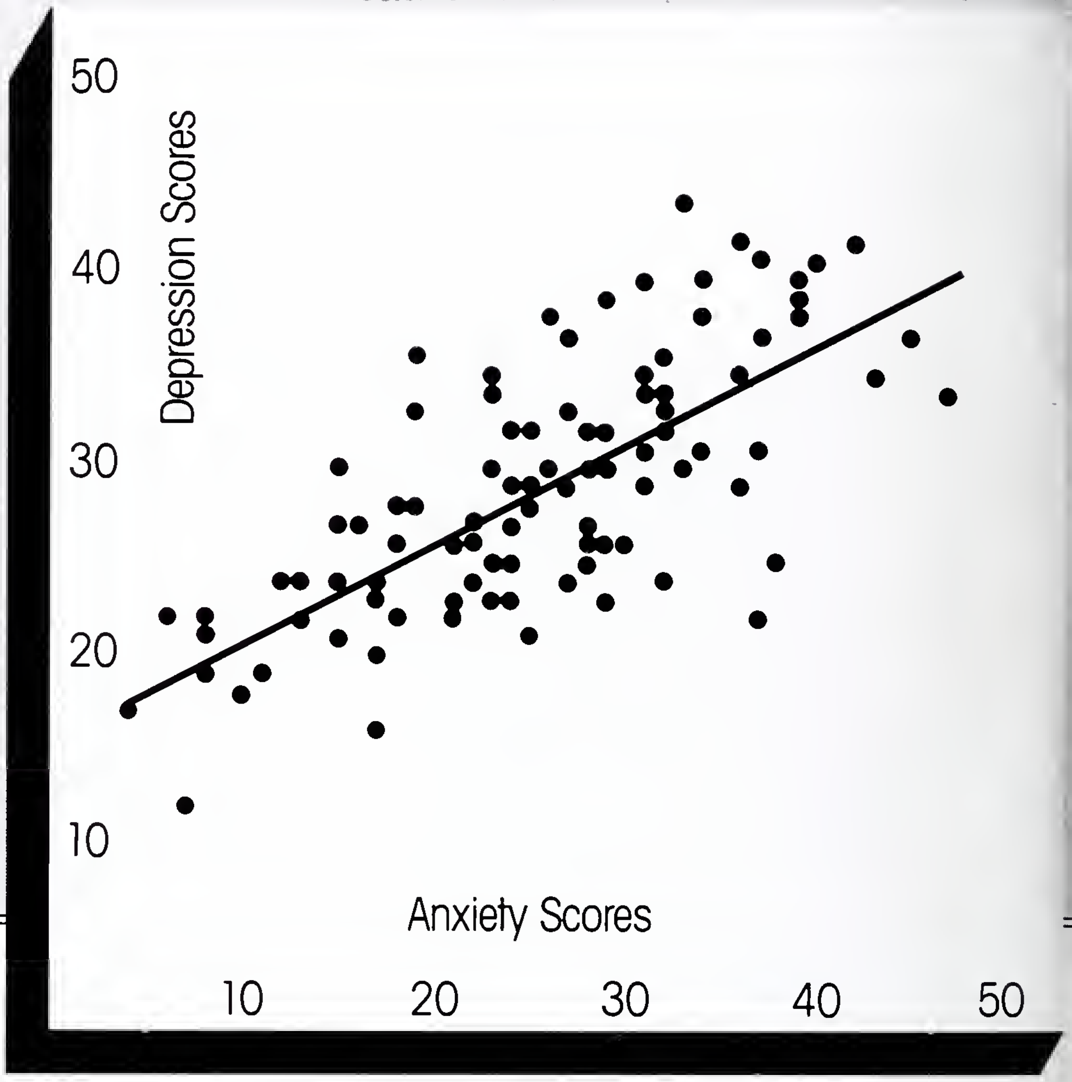

The graph illustrates the close correlation between depression and anxiety derived through the MMPI and the Taylor Manifest Anxiety Scale in 100 nonpsychotic psychiatric patients. The Coefficient of Correlation is 0.7. As depression increased, so did the anxiety levels.
—Adapted from Claghorn J[1]

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1. Claghorn J: *Psychosomatics 11*:438-441, Sept-Oct 1970

Please see summary of product information on inside cover.

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